

TRIAC (ISOLATED TYPE)

TMG5C40/60F

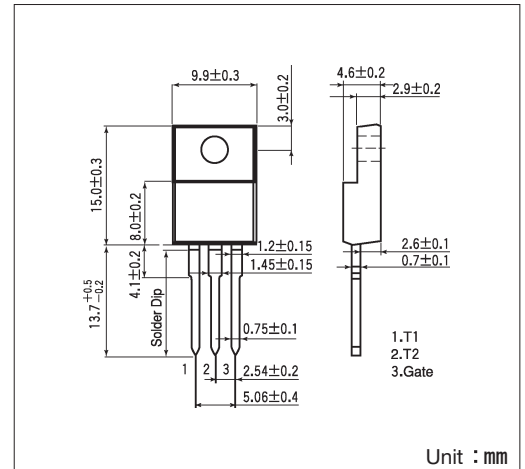
TOP



UL;E76102 (M)

TMG5C40/60F are isolated mold triac suitable for wide range of applications like copier, microwave oven, solid state switch, motor control, light and heater control.

- I_{T(RMS)} 5A
- High surge capability 55A
- Full molded isolated type
- Three types of lead forming



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Maximum Ratings

(T_j=25°C unless otherwise specified)

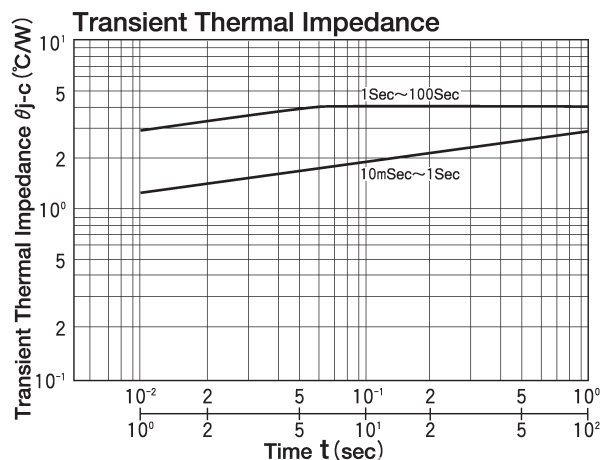
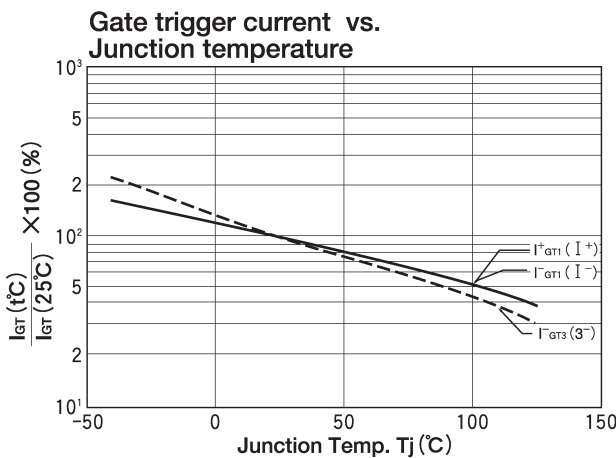
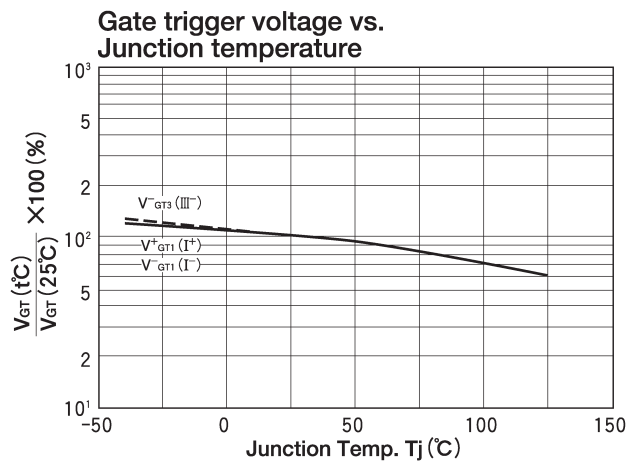
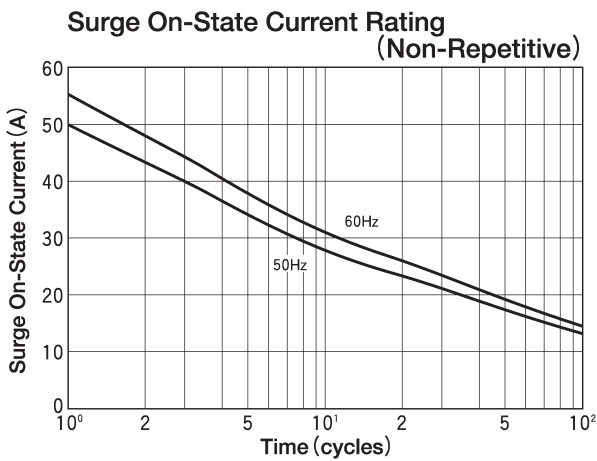
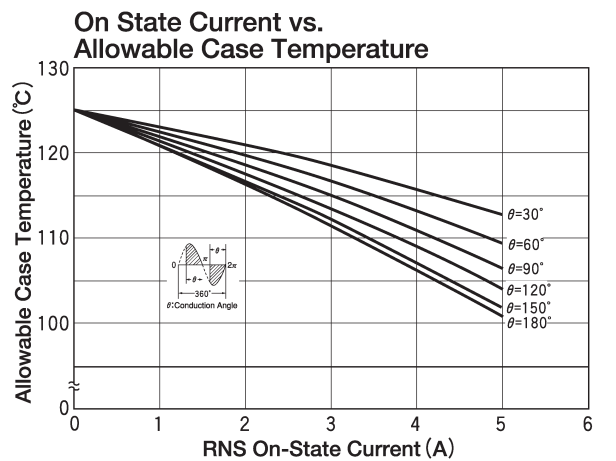
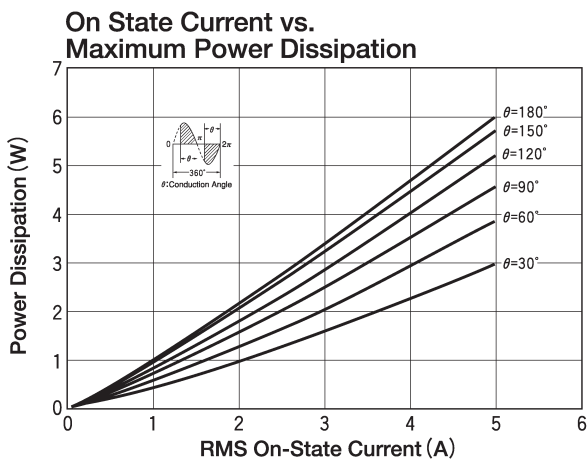
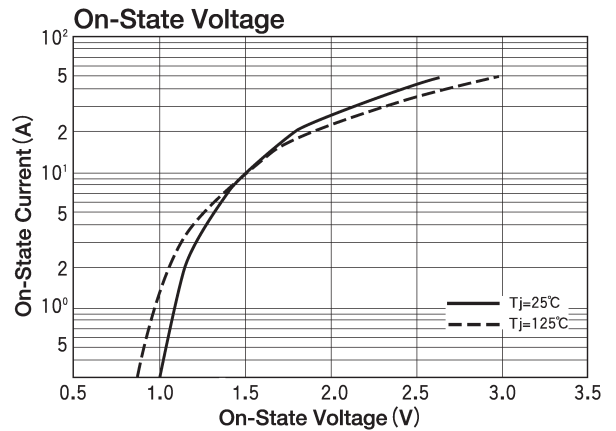
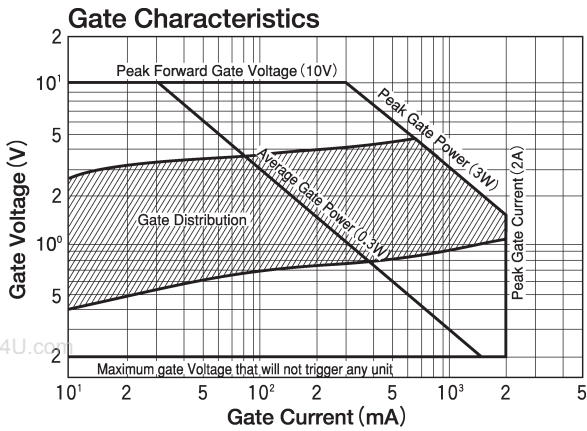
Symbol	Item	Ratings		Unit
		TMG5C40F	TMG5C60F	
V _{DRM}	Repetitive Peak Off-State Voltage	400	600	V

Symbol	Item	Conditions	Ratings	Unit
I _{T(RMS)}	R.M.S. On-State Current	T _c =100°C	5	A
I _{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, peak, non-repetitive	50/55	A
I ² t	I ² t		12.6	A ² S
P _{GM}	Peak Gate Power Dissipation		3	W
P _{G(AV)}	Average Gate Power Dissipation		0.3	W
I _{GM}	Peak Gate Current		2	A
V _{GM}	Peak Gate Voltage		10	V
V _{ISO}	Isolation Breakdown Voltage (R.M.S.)	A.C.1 minute	1500	V
T _j	Operating Junction Temperature		-40~+125	°C
T _{stg}	Storage Temperature		-40~+125	°C
	Mass		2	g

Electrical Characteristics

Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
I _{DRM}	Repetitive Peak Off-State Current	V _D =V _{DRM} , Single phase, half wave, T _j =125°C			1	mA
V _{TM}	Peak On-State Voltage	I _T =7A, Inst. measurement			1.4	V
I _{GT1} ⁺	Gate Trigger Current	V _D =6V, R _L =10 Ω			20	mA
I _{GT1} ⁻					20	
I _{GT3} ⁺					—	
I _{GT3} ⁻					20	
V _{GT1} ⁺	Gate Trigger Voltage	V _D =6V, R _L =10 Ω			1.5	V
V _{GT1} ⁻					1.5	
V _{GT3} ⁺					—	
V _{GT3} ⁻					1.5	
V _{GD}	Non-Trigger Gate Voltage	T _j =125°C, V _D =1/2 V _{DRM}	0.2			V
(dv/dt) _c	Critical Rate of Rise off-State Voltage at commutation	T _j =125°C, (di/dt) _c =-2.5A/ms, V _D =2/3 V _{DRM}	5			V/μs
I _H	Holding Current			10		mA
R _{th(j-c)}	Thermal Impedance	Junction to case			4.0	°C/W

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TRIAC (ISOLATED TYPE)

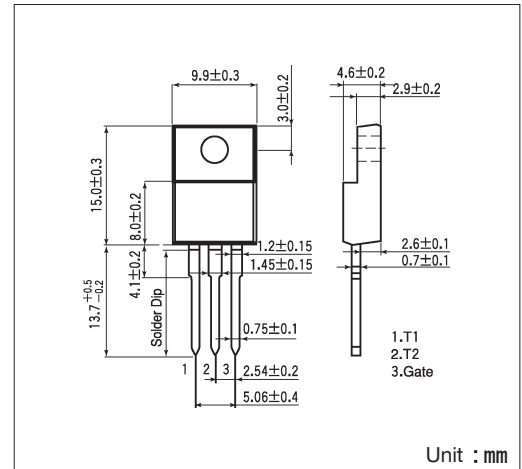
TMG8C40/60F



UL;E76102 (M)

TMG8C40/60F are isolated mold triac suitable for wide range of applications like copier, microwave oven, solid state switch, motor control, light and heater control.

- I_{T(RMS)} 8A
- High surge capability 88A
- Full molded isolated type
- Three types of lead forming



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Maximum Ratings

(T_j=25°C unless otherwise specified)

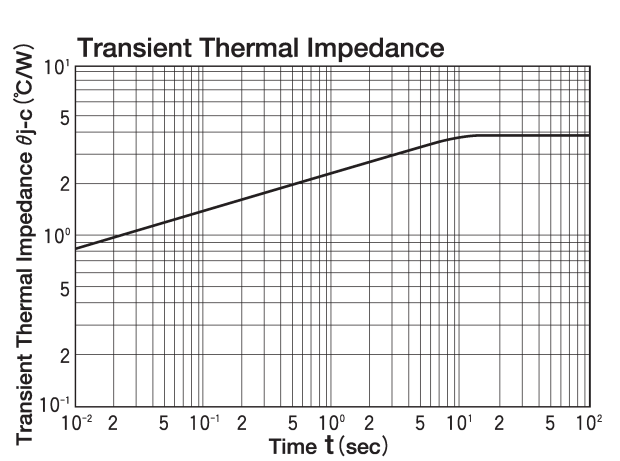
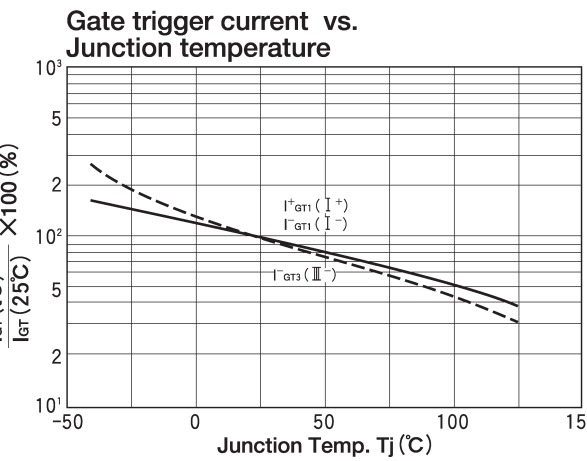
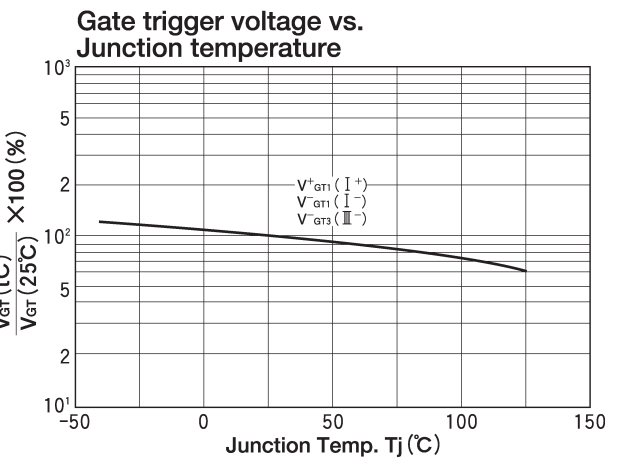
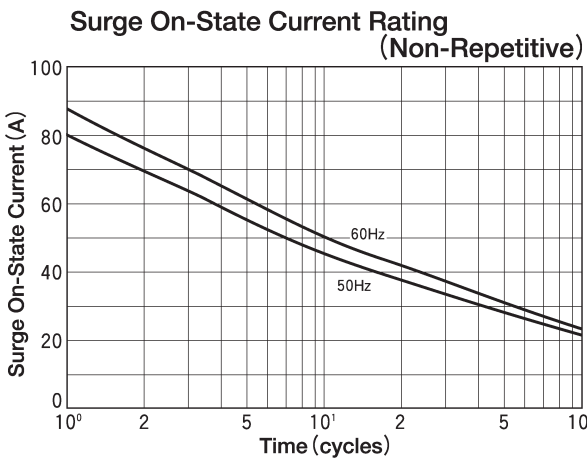
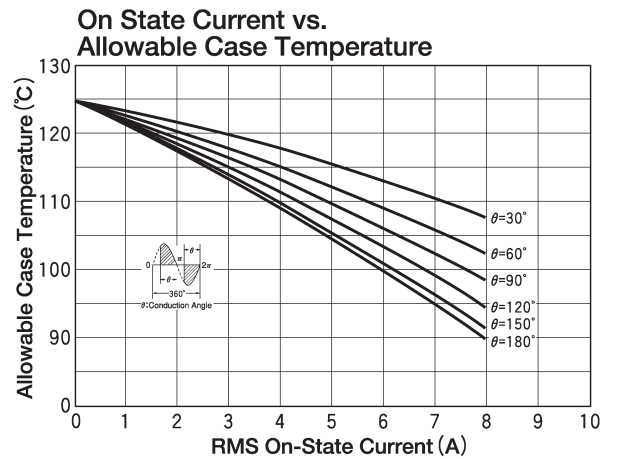
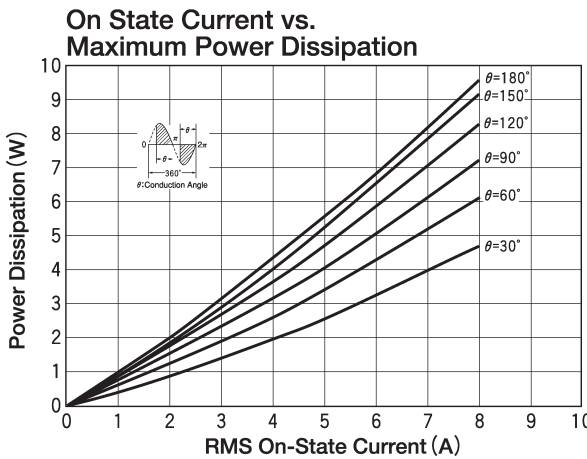
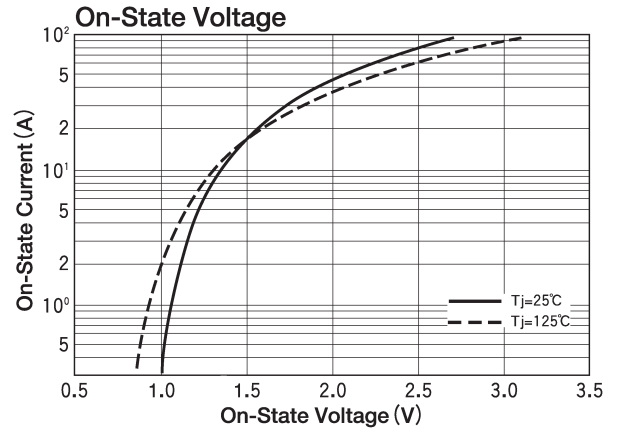
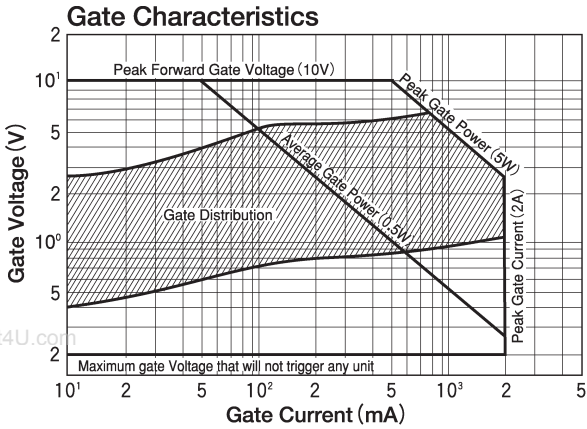
Symbol	Item	Ratings		Unit
		TMG8C40F	TMG8C60F	
V _{DRM}	Repetitive Peak Off-State Voltage	400	600	V

Symbol	Item	Conditions	Ratings	Unit
I _{T(RMS)}	R.M.S. On-State Current	T _c =89°C	8	A
I _{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, peak, non-repetitive	80/88	A
I ² t	I ² t		32	A ² S
P _{GM}	Peak Gate Power Dissipation		5	W
P _{G(AV)}	Average Gate Power Dissipation		0.5	W
I _{GM}	Peak Gate Current		2	A
V _{GM}	Peak Gate Voltage		10	V
V _{ISO}	Isolation Breakdown Voltage (R.M.S.)	A.C.1 minute	1500	V
T _j	Operating Junction Temperature		-40~+125	°C
T _{stg}	Storage Temperature		-40~+125	°C
	Mass		2	g

Electrical Characteristics

Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
I _{DRM}	Repetitive Peak Off-State Current	V _D =V _{DRM} , Single phase, half wave, T _j =125°C			2	mA
V _{TM}	Peak On-State Voltage	I _T =12A, Inst. measurement			1.4	V
I _{GT1} ⁺	Gate Trigger Current	V _D =6V, R _L =10 Ω			30	mA
I _{GT1} ⁻					30	
I _{GT3} ⁺					—	
I _{GT3} ⁻					30	
V _{GT1} ⁺	Gate Trigger Voltage	V _D =6V, R _L =10 Ω			1.5	V
V _{GT1} ⁻					1.5	
V _{GT3} ⁺					—	
V _{GT3} ⁻					1.5	
V _{GD}	Non-Trigger Gate Voltage	T _j =125°C, V _D =1/2 V _{DRM}	0.2			V
(dv/dt) _c	Critical Rate of Rise off-State Voltage at commutation	T _j =125°C, (di/dt) _c =-4A/ms, V _D =2/3 V _{DRM}	10			V/μs
I _H	Holding Current			15		mA
R _{th(j-c)}	Thermal Impedance	Junction to case			3.7	°C/W

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TRIAC (ISOLATED TYPE)

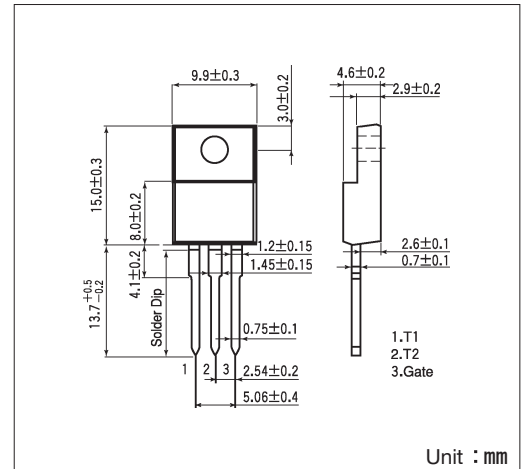
TMG10C40/60F



UL;E76102 (M)

TMG10C40/60F are isolated mold triac suitable for wide range of applications like copier, microwave oven, solid state switch, motor control, light and heater control.

- I_T (RMS) 10A
- High surge capability 110A
- Full molded isolated type
- Three types of lead forming



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Maximum Ratings

($T_j=25^\circ\text{C}$ unless otherwise specified)

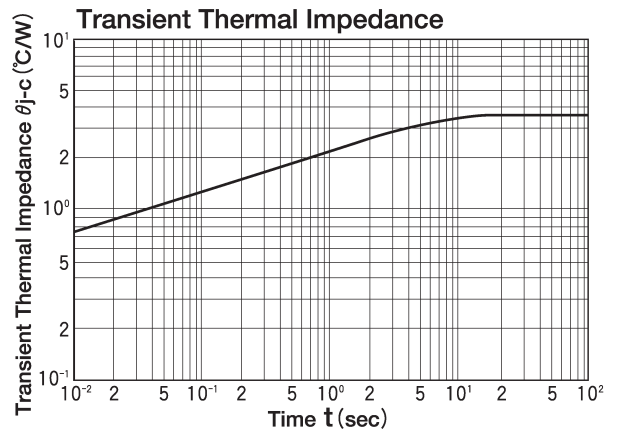
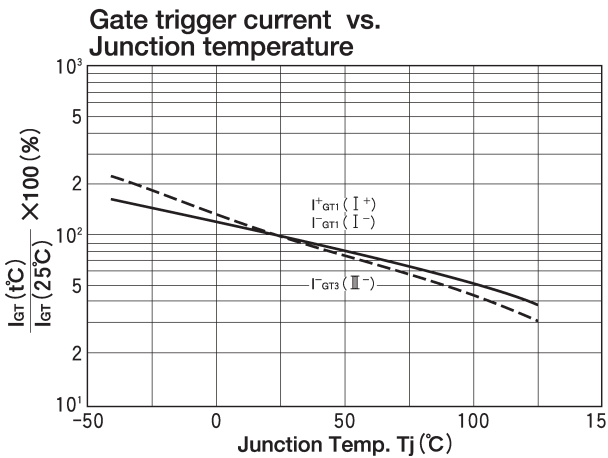
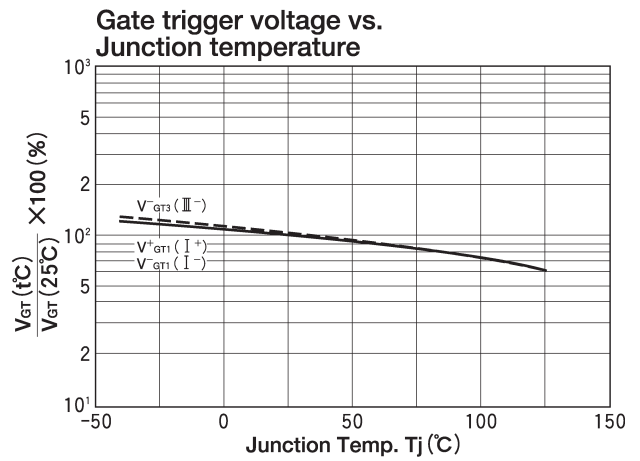
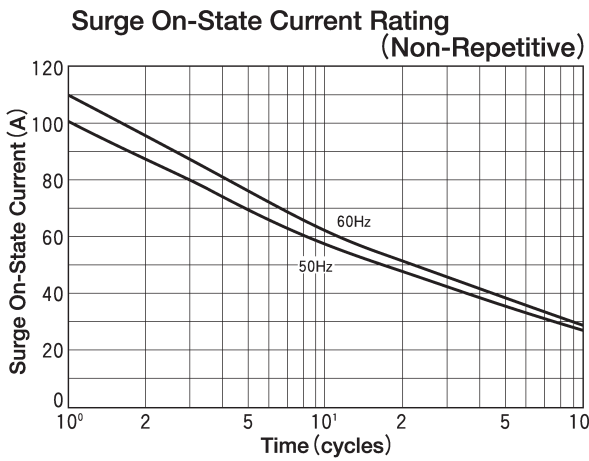
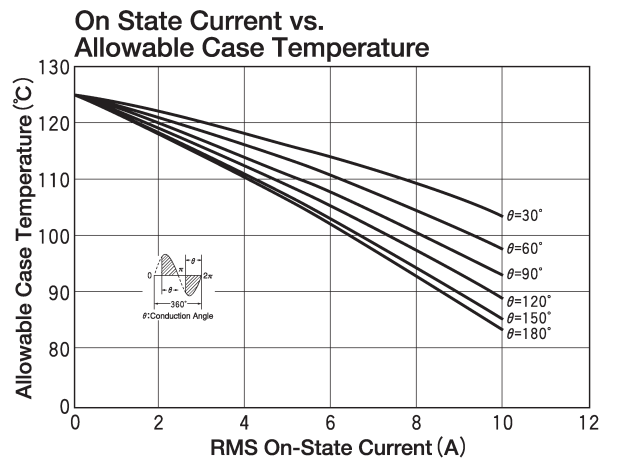
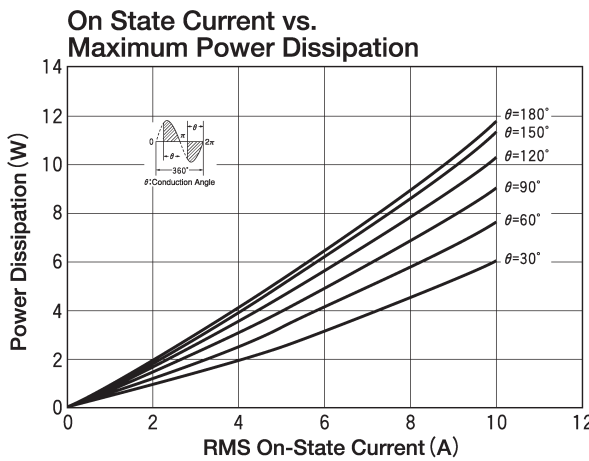
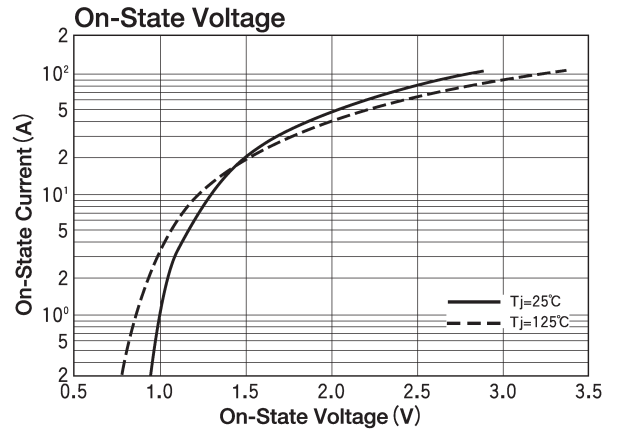
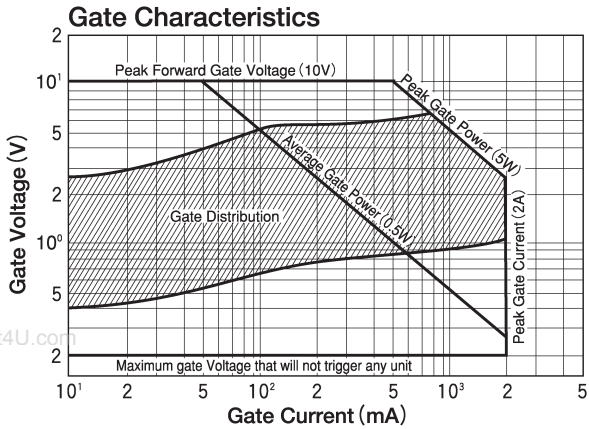
Symbol	Item	Ratings		Unit
		TMG10C40F	TMG10C60F	
V_{DRM}	Repetitive Peak Off-State Voltage	400	600	V

Symbol	Item	Conditions	Ratings	Unit
I_T (RMS)	R.M.S. On-State Current	$T_c=83^\circ\text{C}$	10	A
I_{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, peak, non-repetitive	100/110	A
I^2t	I^2t		50	A^2S
P_{GM}	Peak Gate Power Dissipation		5	W
$P_{G(AV)}$	Average Gate Power Dissipation		0.5	W
I_{GM}	Peak Gate Current		2	A
V_{GM}	Peak Gate Voltage		10	V
V_{ISO}	Isolation Breakdown Voltage (R.M.S.)	A.C.1 minute	1500	V
T_j	Operating Junction Temperature		$-40 \sim +125$	$^\circ\text{C}$
T_{stg}	Storage Temperature		$-40 \sim +125$	$^\circ\text{C}$
	Mass		2	g

Electrical Characteristics

Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
I_{DRM}	Repetitive Peak Off-State Current	$V_D=V_{DRM}$, Single phase, half wave, $T_j=125^\circ\text{C}$			2	mA
V_{TM}	Peak On-State Voltage	$I_T=15\text{A}$, Inst. measurement			1.4	V
I_{GT1}^+	Gate Trigger Current	$V_D=6\text{V}$, $R_L=10\ \Omega$	1		30	mA
I_{GT1}^-			2		30	
I_{GT3}^+			3		—	
I_{GT3}^-			4		30	
V_{GT1}^+	Gate Trigger Voltage	$V_D=6\text{V}$, $R_L=10\ \Omega$	1		1.5	V
V_{GT1}^-			2		1.5	
V_{GT3}^+			3		—	
V_{GT3}^-			4		1.5	
V_{GD}	Non-Trigger Gate Voltage	$T_j=125^\circ\text{C}$, $V_D=\frac{1}{2}V_{DRM}$	0.2			V
$(dv/dt)_c$	Critical Rate of Rise off-State Voltage at commutation	$T_j=125^\circ\text{C}$, $(di/dt)_c=-5\text{A/ms}$, $V_D=\frac{2}{3}V_{DRM}$	10			$\text{V}/\mu\text{s}$
I_H	Holding Current			20		mA
$R_{th(j-c)}$	Thermal Impedance	Junction to case			3.5	$^\circ\text{C}/\text{W}$

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TRIAC (ISOLATED TYPE)

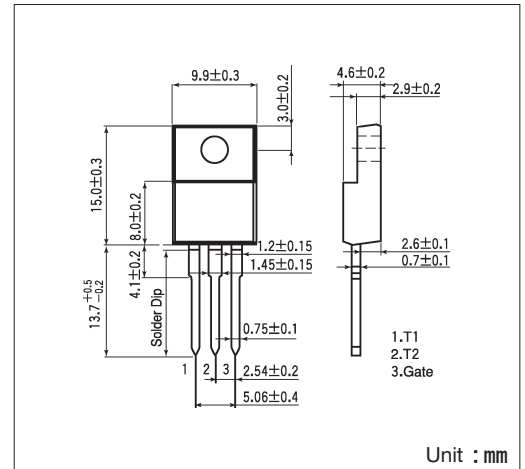
TMG12C40/60F



UL;E76102 (M)

TMG12C40/60F are isolated mold triac suitable for wide range of applications like copier, microwave oven, solid state switch, motor control, light and heater control.

- I_{T(RMS)} 12A
- High surge capability 130A
- Full molded isolated type
- Three types of lead forming



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Maximum Ratings

(T_j=25°C unless otherwise specified)

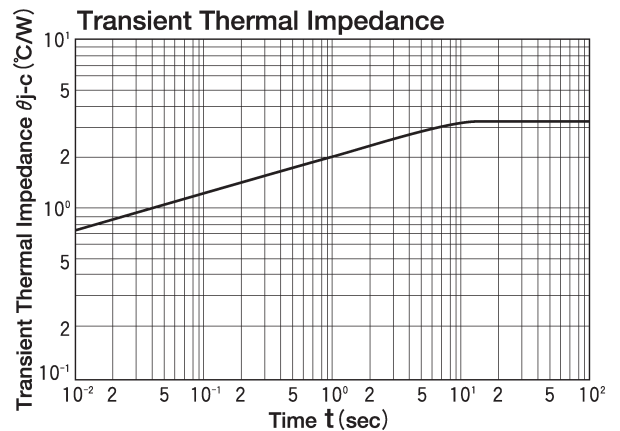
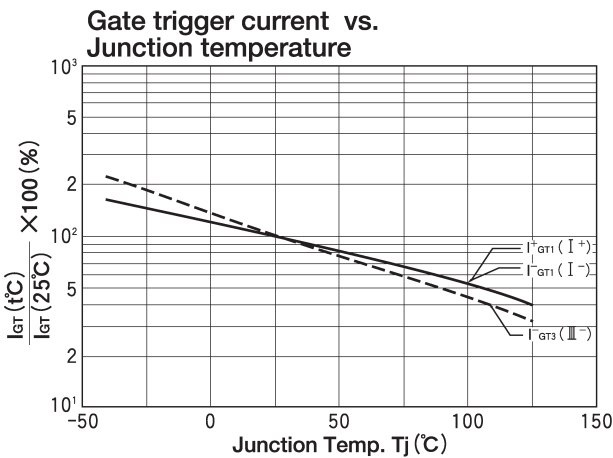
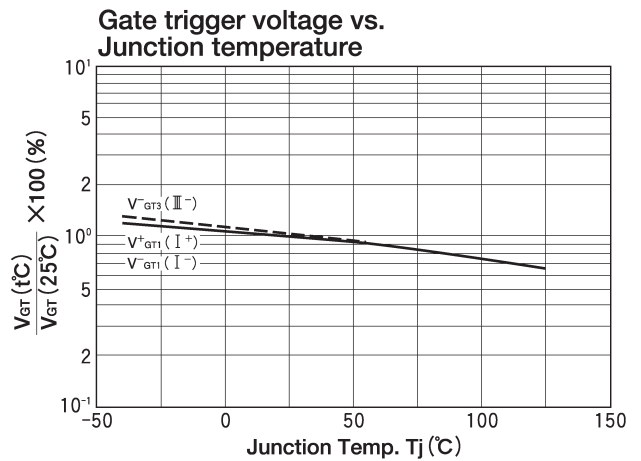
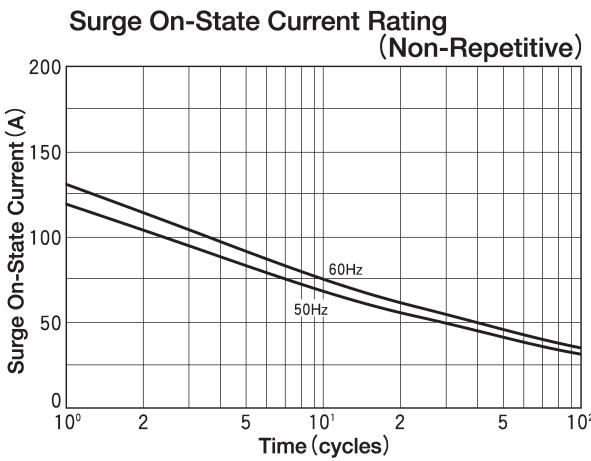
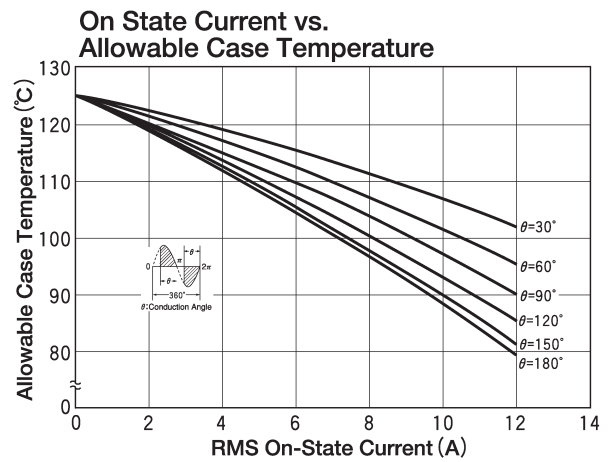
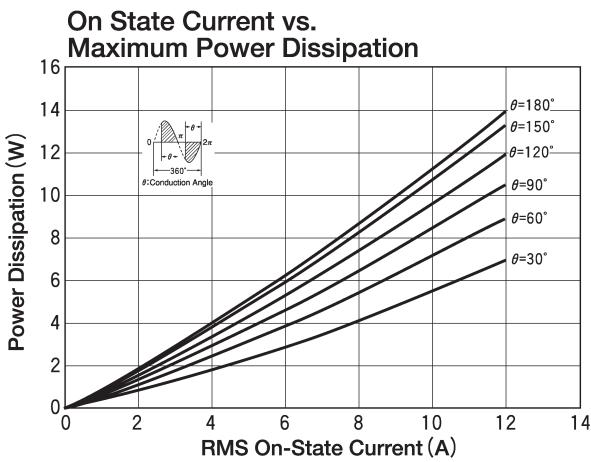
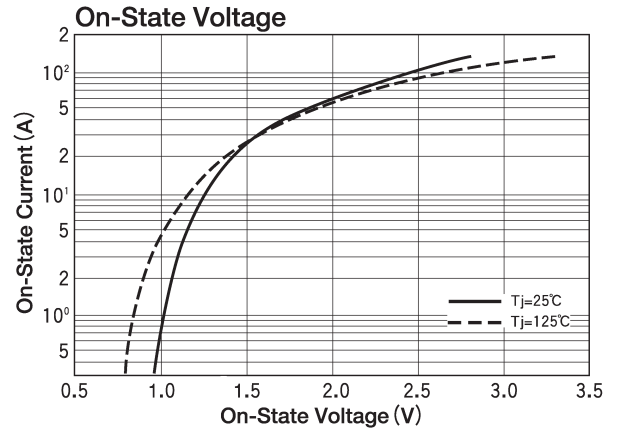
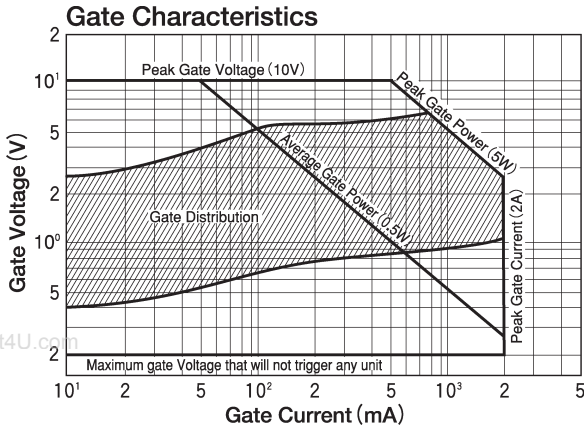
Symbol	Item	Ratings		Unit
		TMG12C40F	TMG12C60F	
V _{DRM}	Repetitive Peak Off-State Voltage	400	600	V

Symbol	Item	Conditions	Ratings	Unit
I _{T(RMS)}	R.M.S. On-State Current	T _c =79°C	12	A
I _{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, peak, non-repetitive	119/130	A
I ² t	I ² t		71	A ² S
P _{GM}	Peak Gate Power Dissipation		5	W
P _{G(AV)}	Average Gate Power Dissipation		0.5	W
I _{GM}	Peak Gate Current		2	A
V _{GM}	Peak Gate Voltage		10	V
V _{ISO}	Isolation Breakdown Voltage (R.M.S.)	A.C.1 minute	1500	V
T _j	Operating Junction Temperature		-40~+125	°C
T _{stg}	Storage Temperature		-40~+125	°C
	Mass		2	g

Electrical Characteristics

Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
I _{DRM}	Reptitive Peak Off-State Current	V _D =V _{DRM} , Single phase, half wave, T _j =125°C			2	mA
V _{TM}	Peak On-State Voltage	I _T =20A, Inst. measurement			1.4	V
I _{GT1} ⁺	Gate Trigger Current	V _D =6V, R _L =10 Ω			30	mA
I _{GT1} ⁻					30	
I _{GT3} ⁺					—	
I _{GT3} ⁻					30	
V _{GT1} ⁺	Gate Trigger Voltage	V _D =6V, R _L =10 Ω			1.5	V
V _{GT1} ⁻					1.5	
V _{GT3} ⁺					—	
V _{GT3} ⁻					1.5	
V _{GD}	Non-Trigger Gate Voltage	T _j =125°C, V _D =1/2 V _{DRM}	0.2			V
(dv/dt) _c	Critical Rate of Rise off-State Voltage at commutation	T _j =125°C, (di/dt) _c =-6A/ms, V _D =2/3 V _{DRM}	10			V/μs
I _H	Holding Current			20		mA
R _{th(j-c)}	Thermal Impedance	Junction to case			3.3	°C/W

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TRIAC (ISOLATED TYPE)

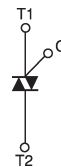
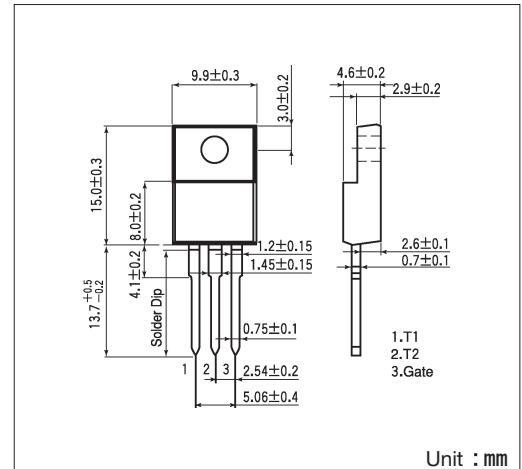
TMG16C40/60F



UL;E76102 (M)

TMG16C40/60F are isolated mold triac suitable for wide range of applications like copier, microwave oven, solid state switch, motor control, light and heater control.

- I_{T(RMS)} 16A
- High surge capability 170A
- Full molded isolated type
- Three types of lead forming



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Maximum Ratings

(T_j=25°C unless otherwise specified)

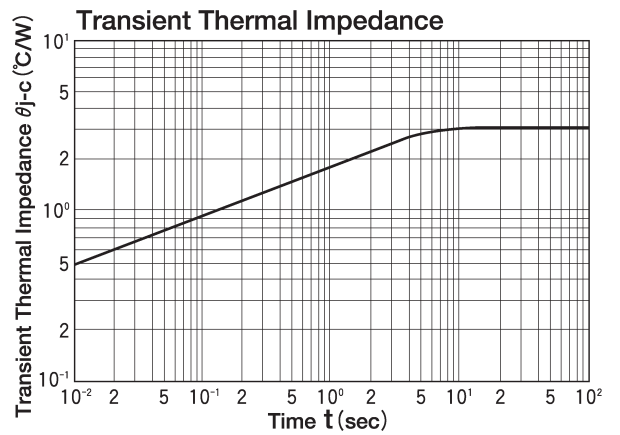
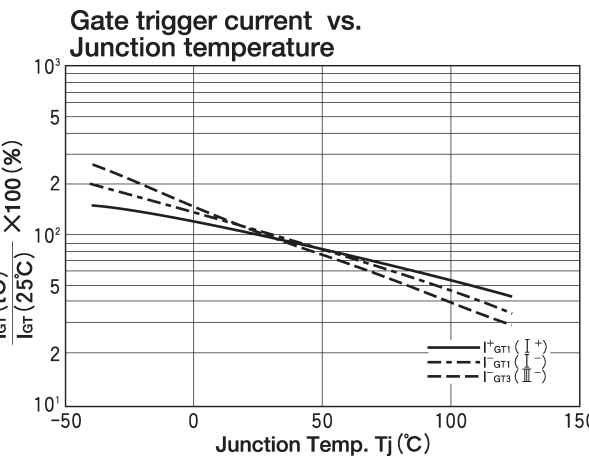
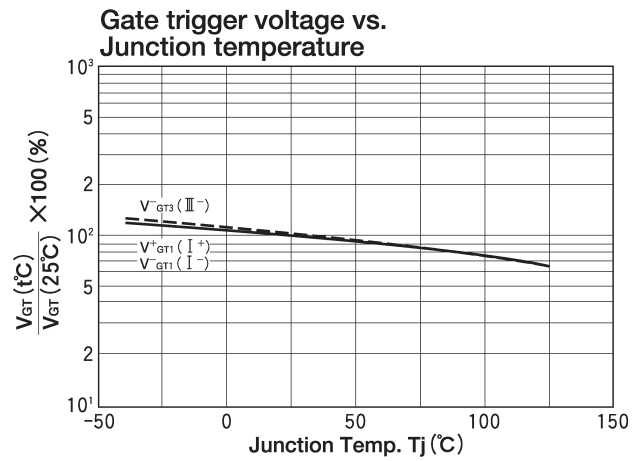
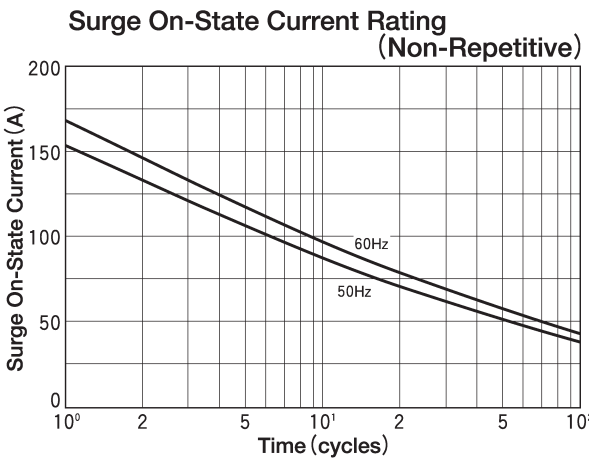
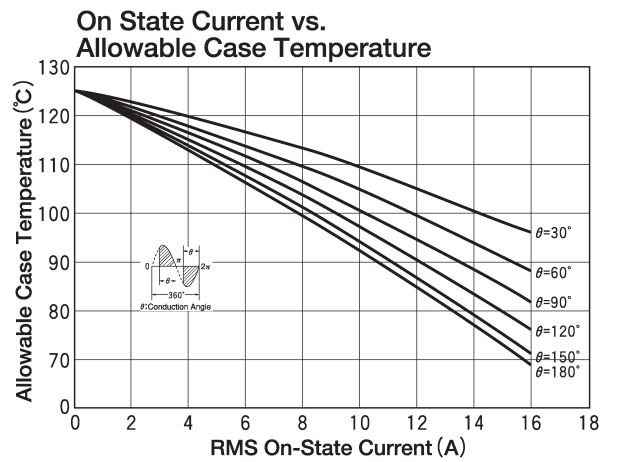
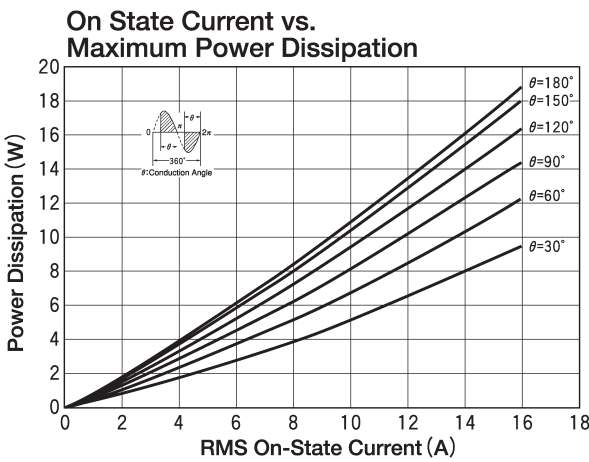
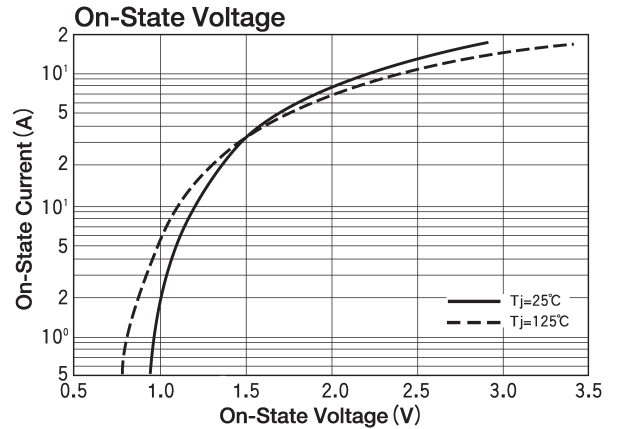
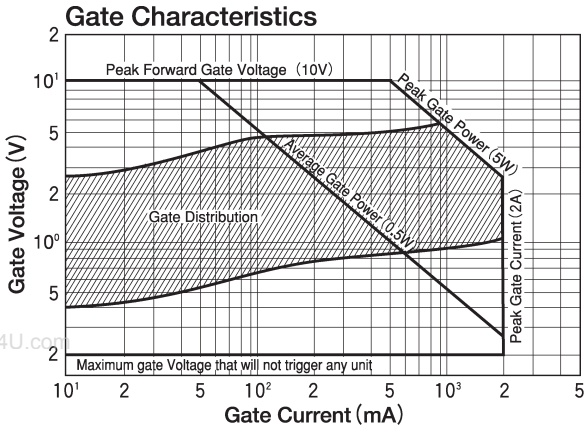
Symbol	Item	Ratings		Unit
		TMG16C40F	TMG16C60F	
V _{DRM}	Repetitive Peak Off-State Voltage	400	600	V

Symbol	Item	Conditions	Ratings	Unit
I _{T(RMS)}	R.M.S. On-State Current	T _c =68°C	16	A
I _{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, peak, non-repetitive	155/170	A
I ² t	I ² t		120	A ² S
P _{GM}	Peak Gate Power Dissipation		5	W
P _{G(AV)}	Average Gate Power Dissipation		0.5	W
I _{GM}	Peak Gate Current		2	A
V _{GM}	Peak Gate Voltage		10	V
V _{ISO}	Isolation Breakdown Voltage (R.M.S.)	A.C.1 minute	1500	V
T _j	Operating Junction Temperature		-40~+125	°C
T _{stg}	Storage Temperature		-40~+125	°C
	Mass		2	g

Electrical Characteristics

Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
I _{DRM}	Repetitive Peak Off-State Current	V _D =V _{DRM} , Single phase, half wave, T _j =125°C			2	mA
V _{TM}	Peak On-State Voltage	I _T =25A, Inst. measurement			1.4	V
I _{GT1} ⁺	Gate Trigger Current	V _D =6V, R _L =10 Ω			30	mA
I _{GT1} ⁻					30	
I _{GT3} ⁺					—	
I _{GT3} ⁻					30	
V _{GT1} ⁺	Gate Trigger Voltage	V _D =6V, R _L =10 Ω			1.5	V
V _{GT1} ⁻					1.5	
V _{GT3} ⁺					—	
V _{GT3} ⁻					1.5	
V _{GD}	Non-Trigger Gate Voltage	T _j =125°C, V _D =1/2 V _{DRM}	0.2			V
(dv/dt) _c	Critical Rate of Rise off-State Voltage at commutation	T _j =125°C, (di/dt) _c =-8A/ms, V _D =2/3 V _{DRM}	10			V/μs
I _H	Holding Current			25		mA
R _{th(j-c)}	Thermal Impedance	Junction to case			3.0	°C/W

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TRIAC (NON-ISOLATED TYPE)

TMG5C60

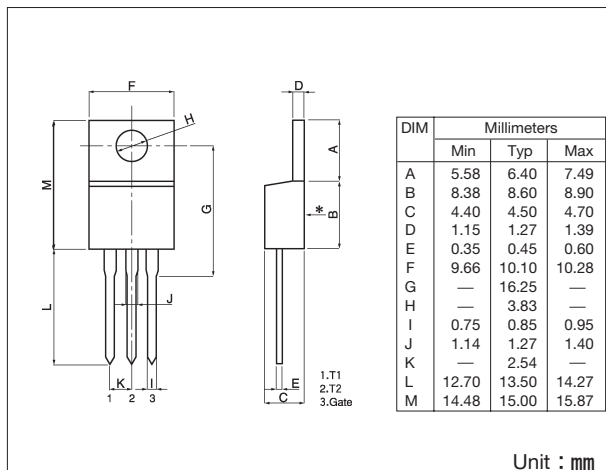
TOP



TMG5C60 are non-isolated triac suitable for wide range of applications like copier, microwave oven, solid state switch, motor control, light and heater control.

- $I_{T(RMS)}$ 5A
- High surge capability 55A
- Non-isolated type

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Maximum Ratings

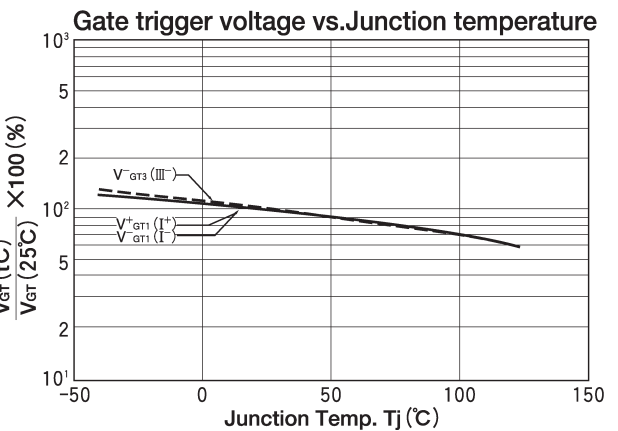
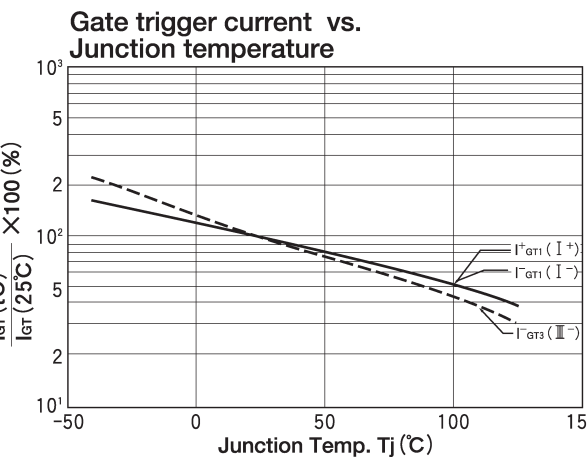
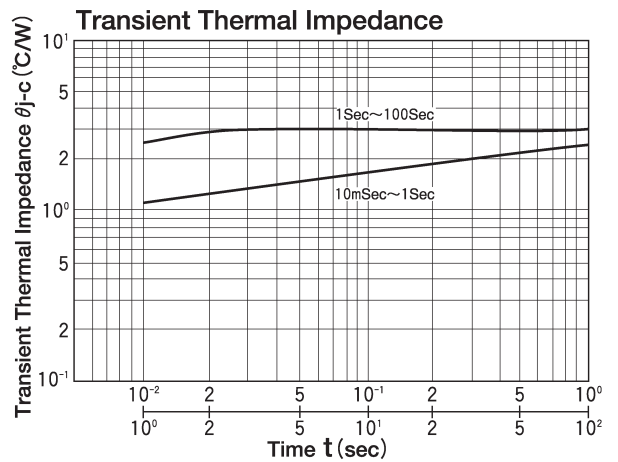
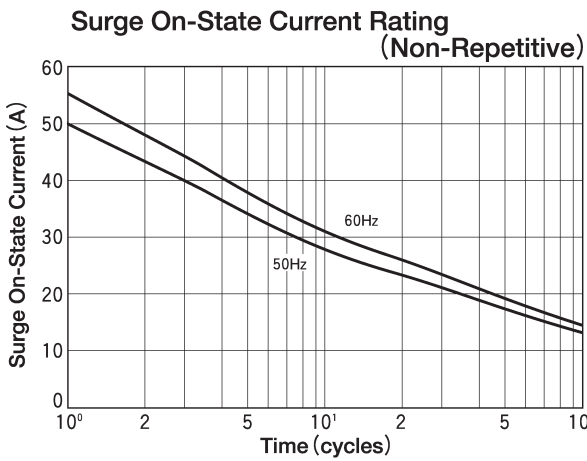
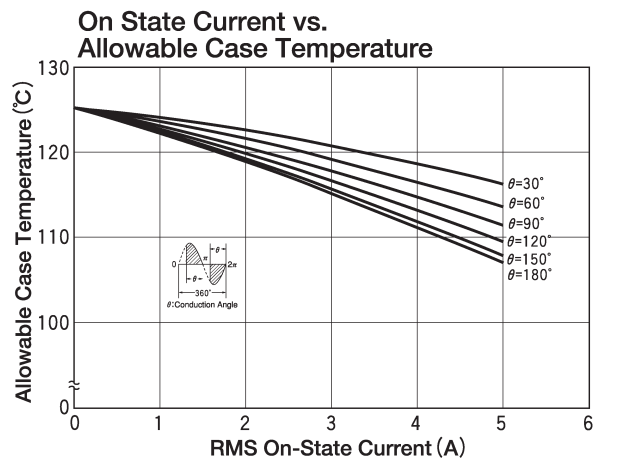
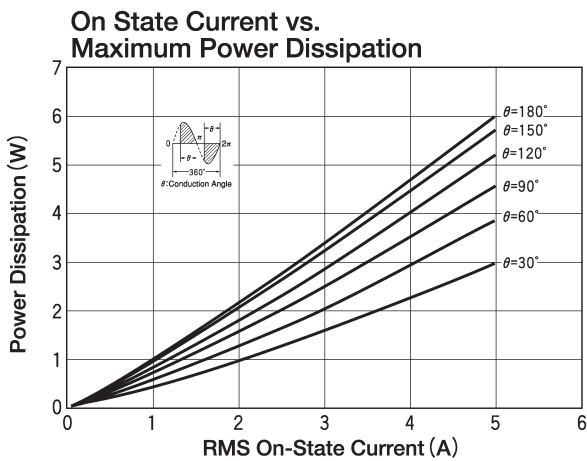
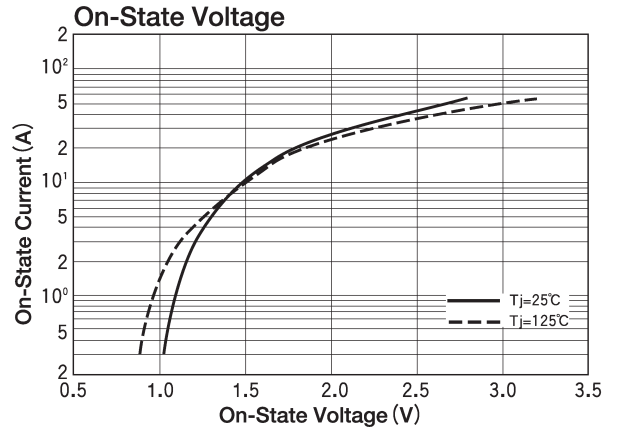
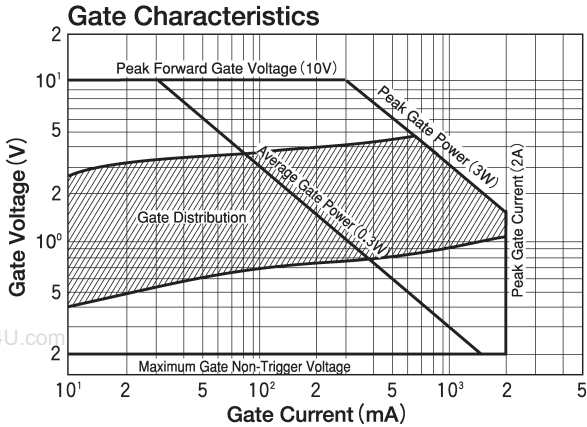
($T_j=25^\circ\text{C}$ unless otherwise specified)

Symbol	Item	Ratings		Unit
		TMG5C60		
V_{DRM}	Repetitive Peak Off-State Voltage	600		V

Symbol	Item	Conditions	Ratings	Unit
$I_{T(RMS)}$	R.M.S. On-State Current	$T_c=105^\circ\text{C}$	5	A
I_{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, peak, non-repetitive	50/55	A
I^2t	I^2t	1ms~10ms	12.6	A ² S
P_{GM}	Peak Gate Power Dissipation		3	W
$P_G(AV)$	Average Gate Power Dissipation		0.3	W
I_{GM}	Peak Gate Current		2	A
V_{GM}	Peak Gate Voltage		10	V
T_j	Operating Junction Temperature		-40~+125	$^\circ\text{C}$
T_{stg}	Storage Temperature		-40~+125	$^\circ\text{C}$
	Mass		2	g

Electrical Characteristics

Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
I_{DRM}	Reptitive Peak Off-State Current	$V_D=V_{DRM}$, Single phase, half wave, $T_j=125^\circ\text{C}$			1	mA
V_{TM}	Peak On-State Voltage	$I_T=7\text{A}$, Inst. measurement			1.4	V
I_{GT1}^+	Gate Trigger Current	$V_D=6\text{V}$, $R_L=10\ \Omega$	1		20	mA
I_{GT1}^-			2		20	
I_{GT3}^+			3		—	
I_{GT3}^-			4		20	
V_{GT1}^+	Gate Trigger Voltage	$V_D=6\text{V}$, $R_L=10\ \Omega$	1		1.5	V
V_{GT1}^-			2		1.5	
V_{GT3}^+			3		—	
V_{GT3}^-			4		1.5	
V_{GD}	Non-Trigger Gate Voltage	$T_j=125^\circ\text{C}$, $V_D=1/2 V_{DRM}$	0.2			V
$(dv/dt)_c$	Critical Rate of Rise off-State Voltage at commutation	$T_j=125^\circ\text{C}$, $(di/dt)_c=-2.5\text{A/ms}$, $V_D=2/3 V_{DRM}$	5			V/ μs
I_H	Holding Current			10		mA
$R_{th(j-c)}$	Thermal Impedance	Junction to case			3.0	$^\circ\text{C/W}$



TRIAC (NON-ISOLATED TYPE)

TMG8C60

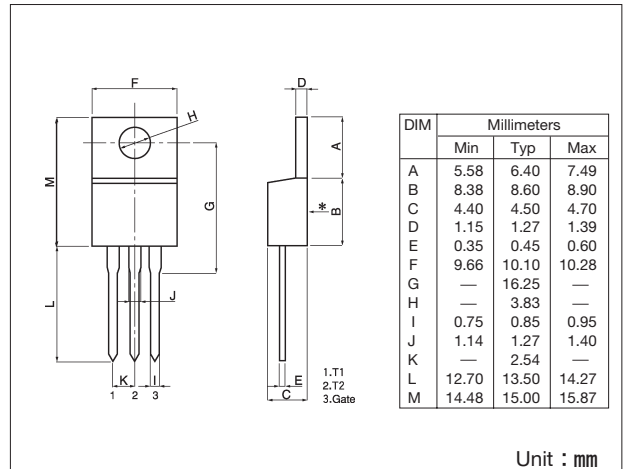
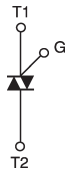
TOP



TMG8C60 are non-isolated triac suitable for wide range of applications like copier, microwave oven, solid state switch, motor control, light and heater control.

- $I_{T(RMS)}$ 8A
- High surge capability 88A
- Non-isolated type

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Maximum Ratings

($T_j=25^\circ\text{C}$ unless otherwise specified)

Symbol	Item	Ratings	Unit
		TMG8C60	
V_{DRM}	Repetitive Peak Off-State Voltage	600	V

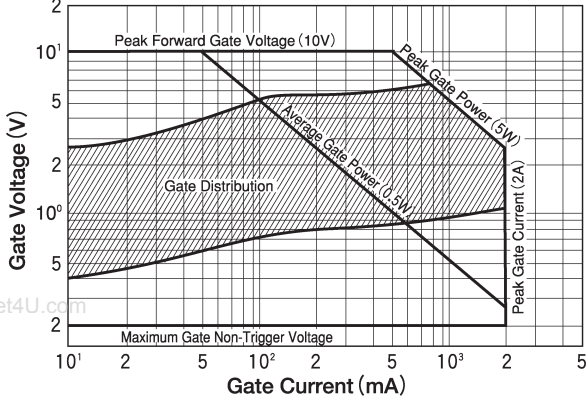
Symbol	Item	Conditions	Ratings	Unit
$I_{T(RMS)}$	R.M.S. On-State Current	$T_c=105^\circ\text{C}$	8	A
I_{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, peak, non-repetitive	80/88	A
I^2t	I^2t	1ms~10ms	32	A^2S
P_{GM}	Peak Gate Power Dissipation		5	W
$P_G(AV)$	Average Gate Power Dissipation		0.5	W
I_{GM}	Peak Gate Current		2	A
V_{GM}	Peak Gate Voltage		10	V
T_j	Operating Junction Temperature		$-40\sim+125$	$^\circ\text{C}$
T_{stg}	Storage Temperature		$-40\sim+125$	$^\circ\text{C}$
	Mass		2	g

Electrical Characteristics

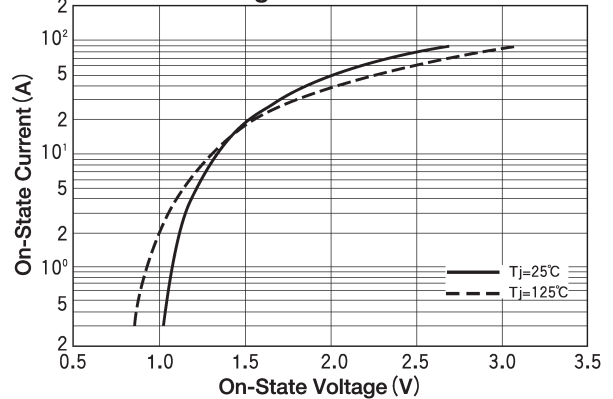
Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
I_{DRM}	Repetitive Peak Off-State Current	$V_D=V_{DRM}$, Single phase, half wave, $T_j=125^\circ\text{C}$			2	mA
V_{TM}	Peak On-State Voltage	$I_T=12\text{A}$, Inst. measurement			1.4	V
I_{GT1}^+	Gate Trigger Current	$V_D=6\text{V}$, $R_L=10\ \Omega$	1		30	mA
I_{GT1}^-			2		30	
I_{GT3}^+			3		—	
I_{GT3}^-			4		30	
V_{GT1}^+	Gate Trigger Voltage	$V_D=6\text{V}$, $R_L=10\ \Omega$	1		1.5	V
V_{GT1}^-			2		1.5	
V_{GT3}^+			3		—	
V_{GT3}^-			4		1.5	
V_{GD}	Non-Trigger Gate Voltage	$T_j=125^\circ\text{C}$, $V_D=1/2 V_{DRM}$	0.2			V
$(dv/dt)_c$	Critical Rate of Rise off-State Voltage at commutation	$T_j=125^\circ\text{C}$, $(di/dt)_c=-4\text{A/ms}$, $V_D=2/3 V_{DRM}$	10			$\text{V}/\mu\text{s}$
I_H	Holding Current			15		mA
$R_{th(j-c)}$	Thermal Impedance	Junction to case			2.0	$^\circ\text{C}/\text{W}$

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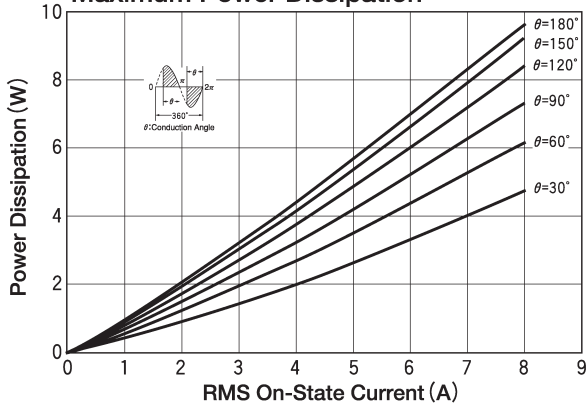
Gate Characteristics



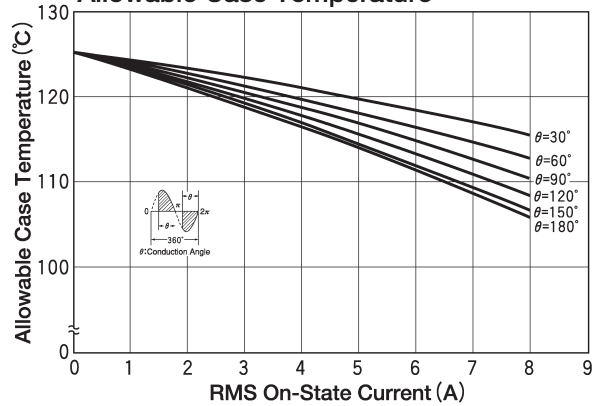
On-State Voltage



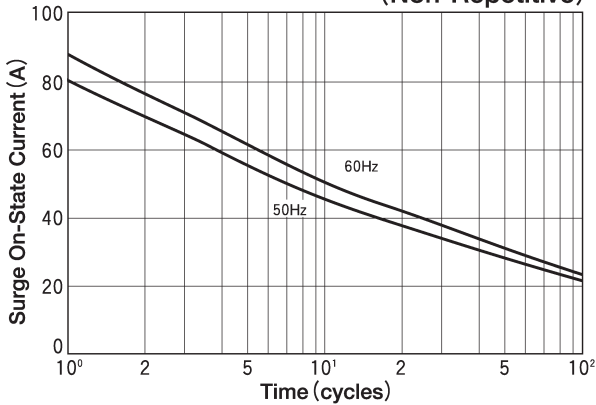
On State Current vs. Maximum Power Dissipation



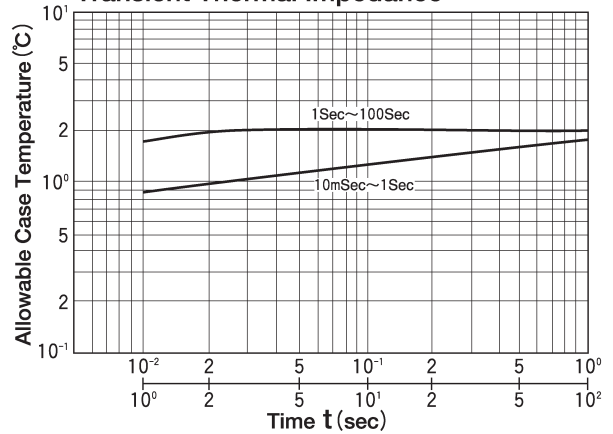
On State Current vs. Allowable Case Temperature



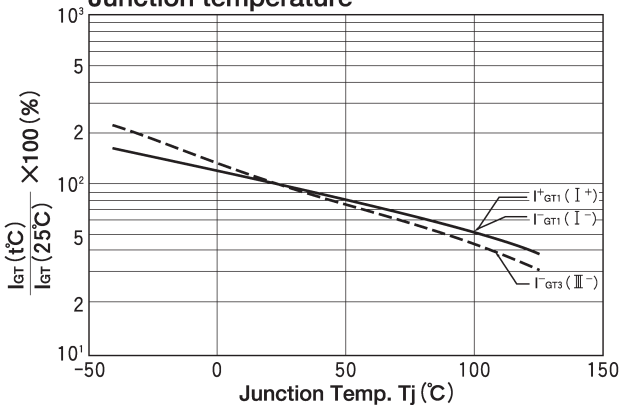
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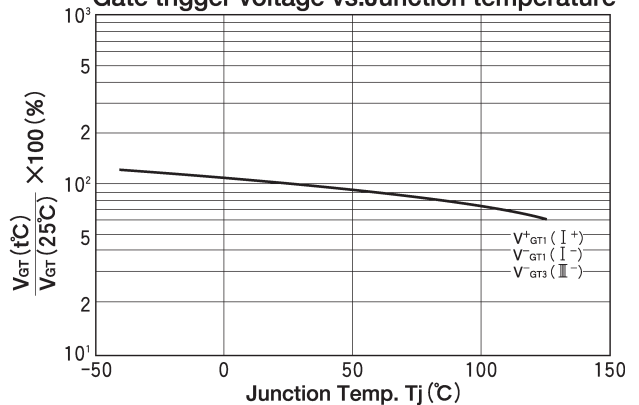
Transient Thermal Impedance



Gate trigger current vs. Junction temperature



Gate trigger voltage vs. Junction temperature



TRIAC (NON-ISOLATED TYPE)

TMG10C60

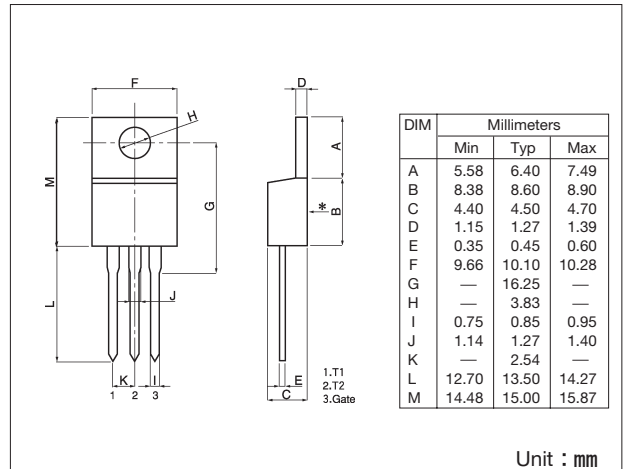
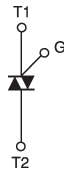
TOP



TMG10C60 are non-isolated triac suitable for wide range of applications like copier, microwave oven, solid state switch, motor control, light and heater control.

- $I_{T(RMS)}$ 10A
- High surge capability 110A
- Non-isolated type

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Maximum Ratings

($T_j=25^\circ\text{C}$ unless otherwise specified)

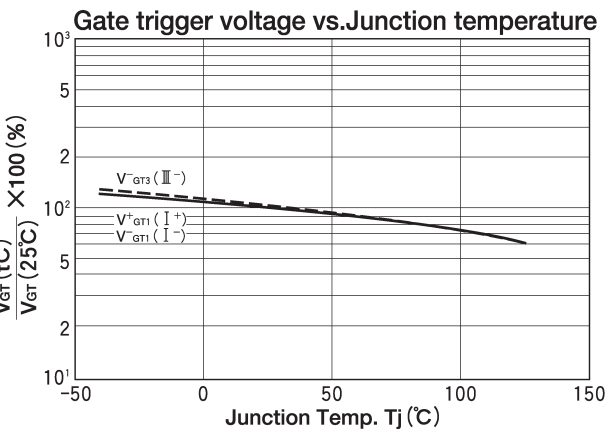
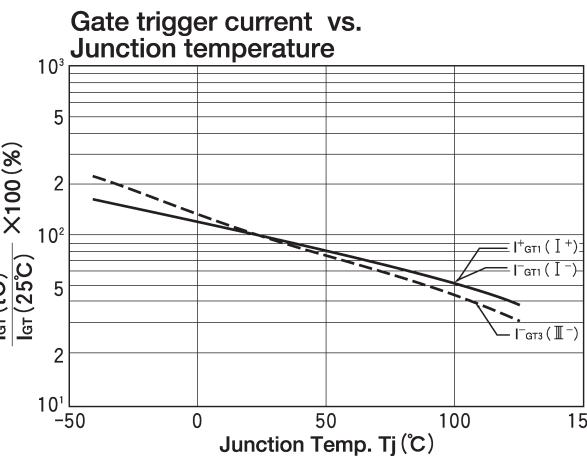
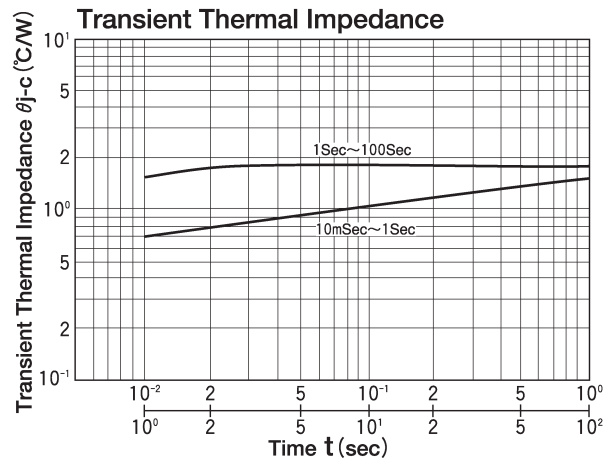
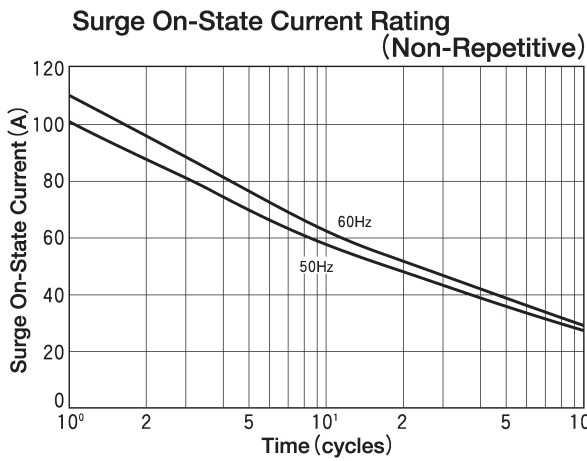
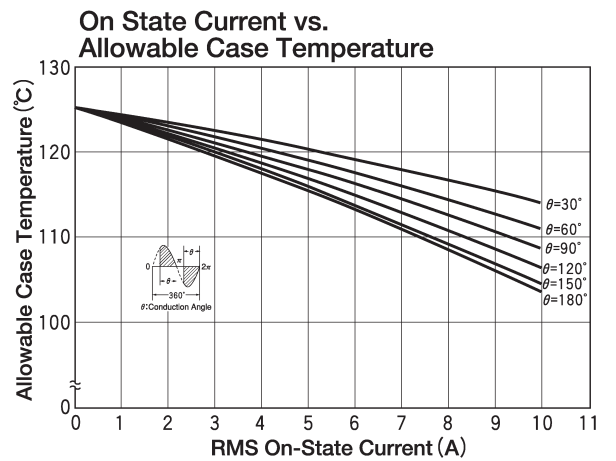
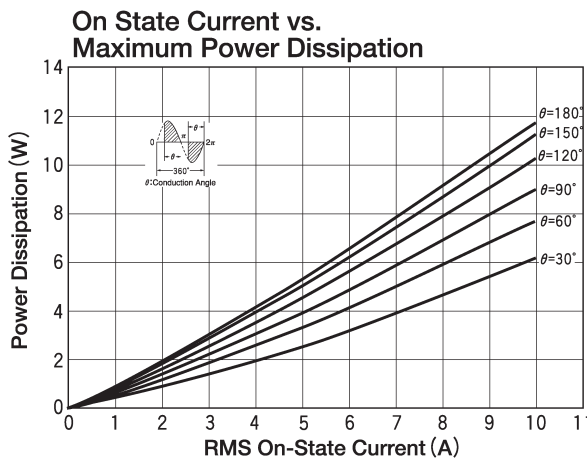
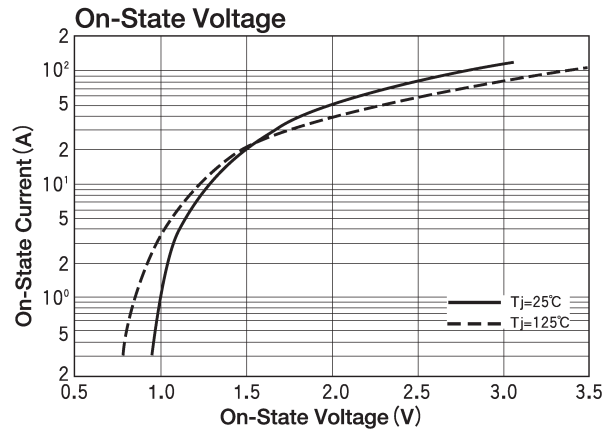
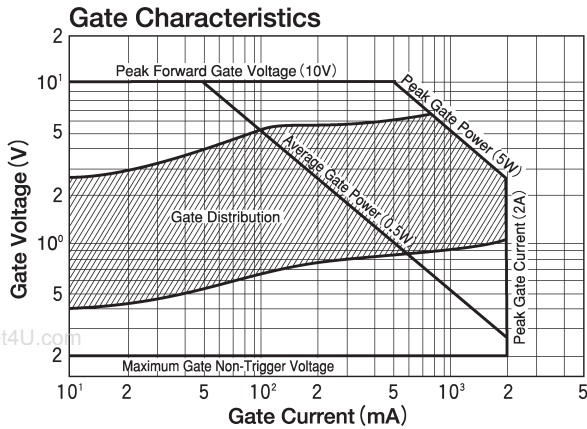
Symbol	Item	Ratings		Unit
		TMG10C60		
V_{DRM}	Repetitive Peak Off-State Voltage	600		V

Symbol	Item	Conditions	Ratings	Unit
$I_{T(RMS)}$	R.M.S. On-State Current	$T_c=103^\circ\text{C}$	10	A
I_{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, peak, non-repetitive	100/110	A
I^2t	I^2t	1ms~10ms	50	A^2S
P_{GM}	Peak Gate Power Dissipation		5	W
$P_G(AV)$	Average Gate Power Dissipation		0.5	W
I_{GM}	Peak Gate Current		2	A
V_{GM}	Peak Gate Voltage		10	V
T_j	Operating Junction Temperature		$-40\sim+125$	$^\circ\text{C}$
T_{stg}	Storage Temperature		$-40\sim+125$	$^\circ\text{C}$
	Mass		2	g

Electrical Characteristics

Symbol	Item	Conditions	Ratings			Unit
			Mon.	Typ.	Max.	
I_{DRM}	Repetitive Peak Off-State Current	$V_D=V_{DRM}$, Single phase, half wave, $T_j=125^\circ\text{C}$			2	mA
V_{TM}	Peak On-State Voltage	$I_T=15\text{A}$, Inst. measurement			1.4	V
I_{GT1}^+	Gate Trigger Current	$V_D=6\text{V}$, $R_L=10\ \Omega$	1		30	mA
I_{GT1}^-			2		30	
I_{GT3}^+			3		—	
I_{GT3}^-			4		30	
V_{GT1}^+	Gate Trigger Voltage	$V_D=6\text{V}$, $R_L=10\ \Omega$	1		1.5	V
V_{GT1}^-			2		1.5	
V_{GT3}^+			3		—	
V_{GT3}^-			4		1.5	
V_{GD}	Non-Trigger Gate Voltage	$T_j=125^\circ\text{C}$, $V_D=1/2 V_{DRM}$	0.2			V
$(dv/dt)_c$	Critical Rate of Rise off-State Voltage at commutation	$T_j=125^\circ\text{C}$, $(di/dt)_c=-5\text{A/ms}$, $V_D=2/3 V_{DRM}$	10			$\text{V}/\mu\text{s}$
I_H	Holding Current			20		mA
$R_{th(j-c)}$	Thermal Impedance	Junction to case			1.8	$^\circ\text{C}/\text{W}$

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TRIAC (NON-ISOLATED TYPE)

TMG12C60

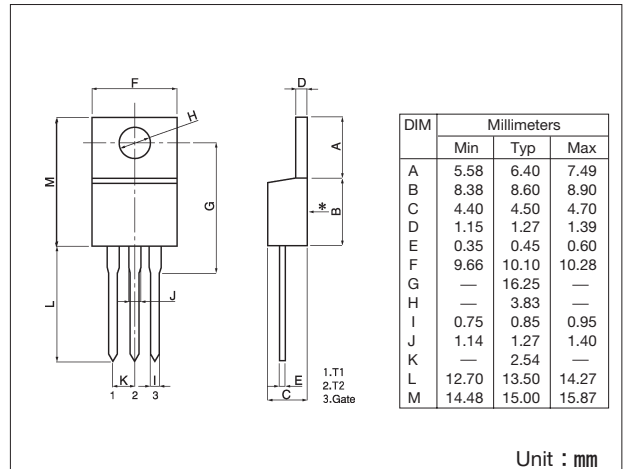
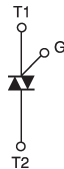
TOP



TMG12C60 are non-isolated triac suitable for wide range of applications like copier, microwave oven, solid state switch, motor control, light and heater control.

- $I_{T(RMS)}$ 12A
- High surge capability 130A
- Non-isolated type

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Maximum Ratings

($T_j=25^\circ\text{C}$ unless otherwise specified)

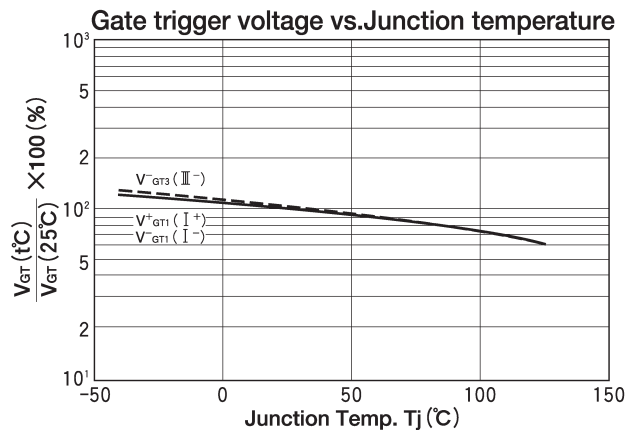
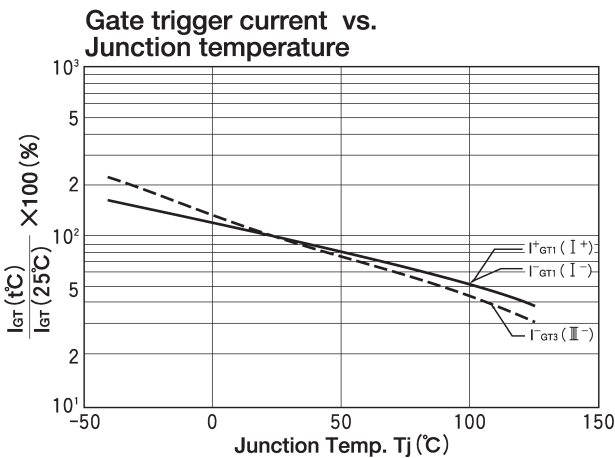
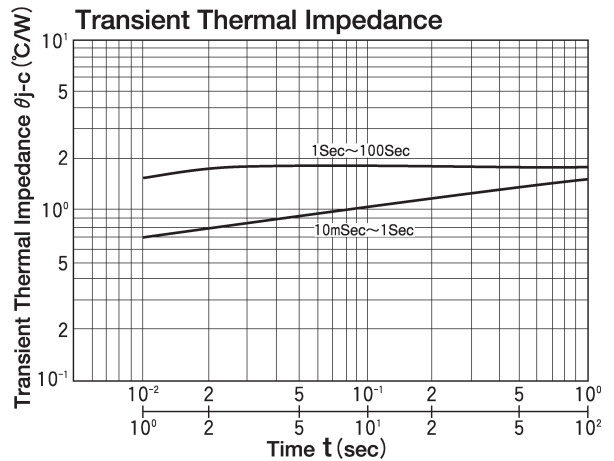
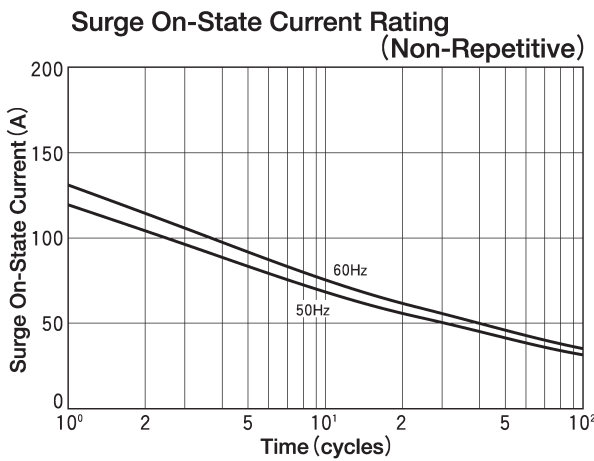
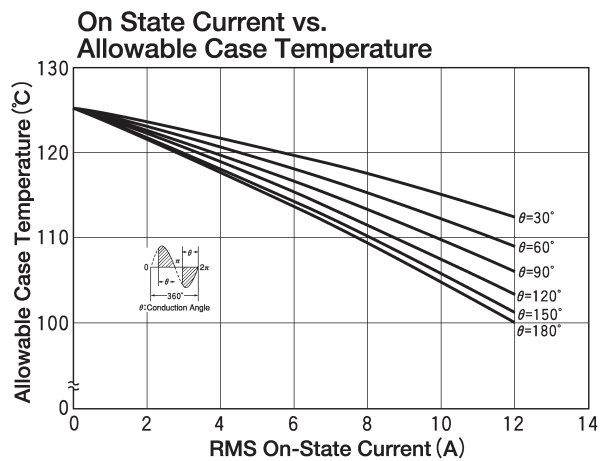
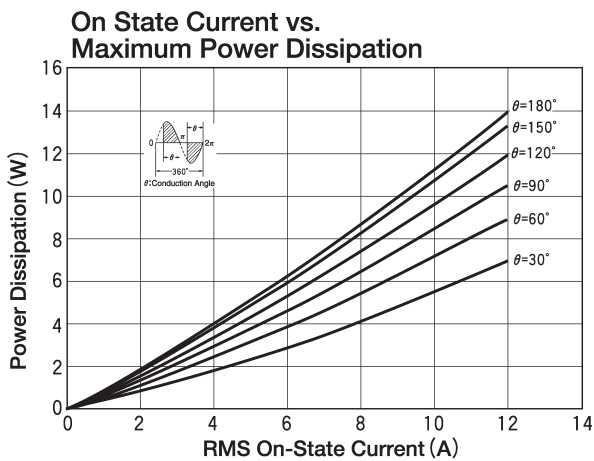
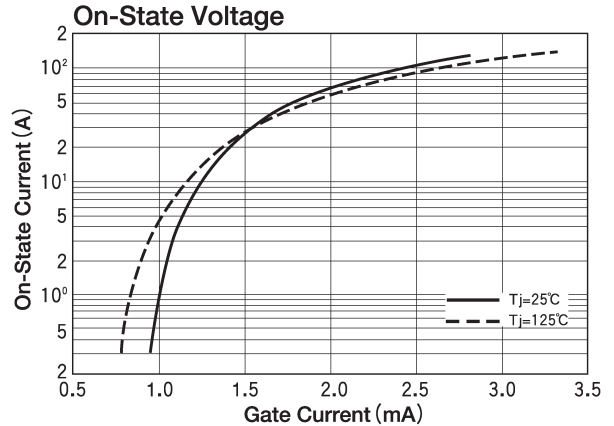
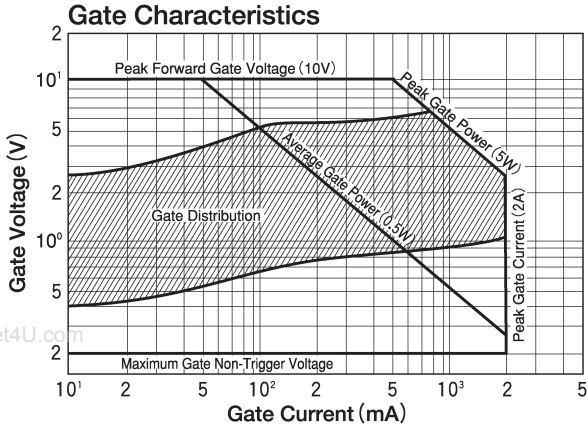
Symbol	Item	Ratings		Unit
		TMG12C60		
V_{DRM}	Repetitive Peak Off-State Voltage	600		V

Symbol	Item	Conditions	Ratings	Unit
$I_{T(RMS)}$	R.M.S. On-State Current	$T_c=100^\circ\text{C}$	12	A
I_{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, peak, non-repetitive	119/130	A
I^2t	I^2t	1ms~10ms	71	A ² S
P_{GM}	Peak Gate Power Dissipation		5	W
$P_G(AV)$	Average Gate Power Dissipation		0.5	W
I_{GM}	Peak Gate Current		2	A
V_{GM}	Peak Gate Voltage		10	V
T_j	Operating Junction Temperature		-40~+125	$^\circ\text{C}$
T_{stg}	Storage Temperature		-40~+125	$^\circ\text{C}$
	Mass		2	g

Electrical Characteristics

Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
I_{DRM}	Repetitive Peak Off-State Current	$V_D=V_{DRM}$, Single phase, half wave, $T_j=125^\circ\text{C}$			2	mA
V_{TM}	Peak On-State Voltage	$I_T=20\text{A}$, Inst. measurement			1.4	V
I_{GT1}^+	Gate Trigger Current	$V_D=6\text{V}$, $R_L=10\ \Omega$	1		30	mA
I_{GT1}^-			2		30	
I_{GT3}^+			3		—	
I_{GT3}^-			4		30	
V_{GT1}^+	Gate Trigger Voltage	$V_D=6\text{V}$, $R_L=10\ \Omega$	1		1.5	V
V_{GT1}^-			2		1.5	
V_{GT3}^+			3		—	
V_{GT3}^-			4		1.5	
V_{GD}	Non-Trigger Gate Voltage	$T_j=125^\circ\text{C}$, $V_D=1/2 V_{DRM}$	0.2			V
$(dv/dt)_c$	Critical Rate of Rise off-State Voltage at commutation	$T_j=125^\circ\text{C}$, $(di/dt)_c=-6\text{A/ms}$, $V_D=2/3 V_{DRM}$	10			V/ μs
I_H	Holding Current			20		mA
$R_{th(j-c)}$	Thermal Impedance	Junction to case			1.8	$^\circ\text{C/W}$

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TRIAC (NON-ISOLATED TYPE)

TMG16C60

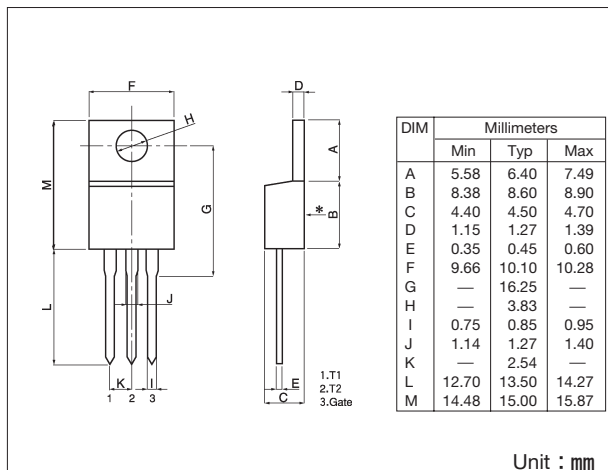
TOP



TMG16C60 are non-isolated triac suitable for wide range of applications like copier, microwave oven, solid state switch, motor control, light and heater control.

- $I_{T(RMS)}$ 16A
- High surge capability 170A
- Non-isolated type

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Maximum Ratings

($T_j=25^\circ\text{C}$ unless otherwise specified)

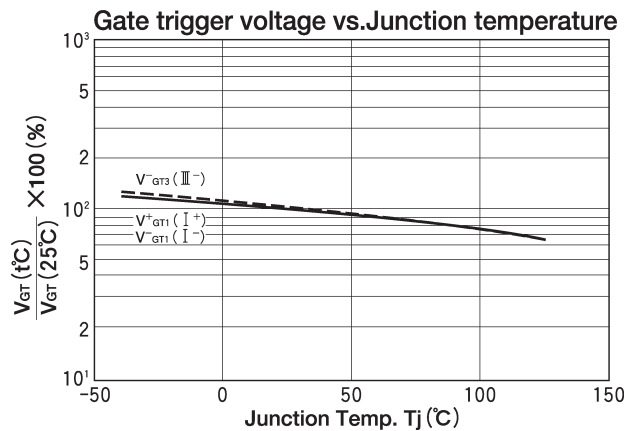
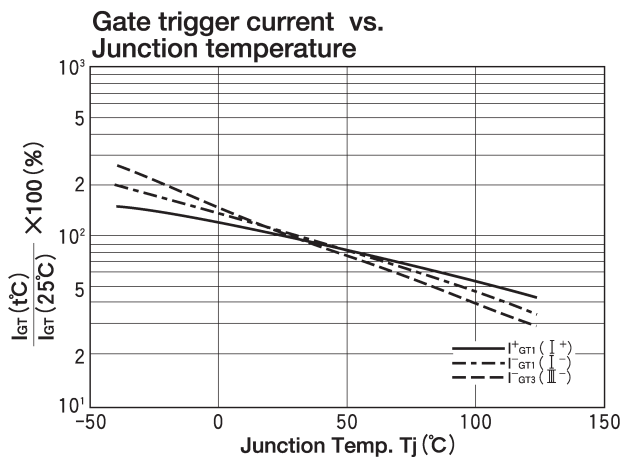
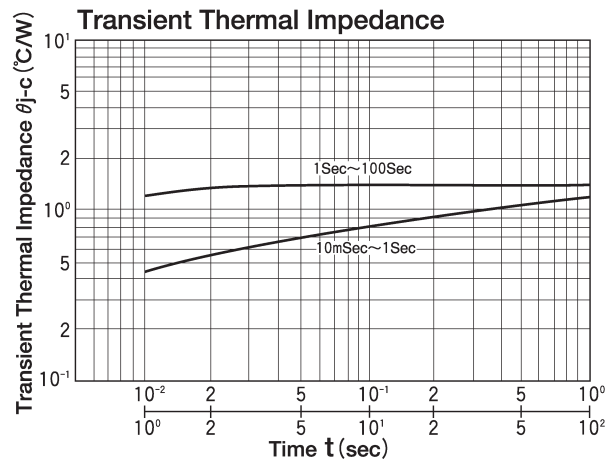
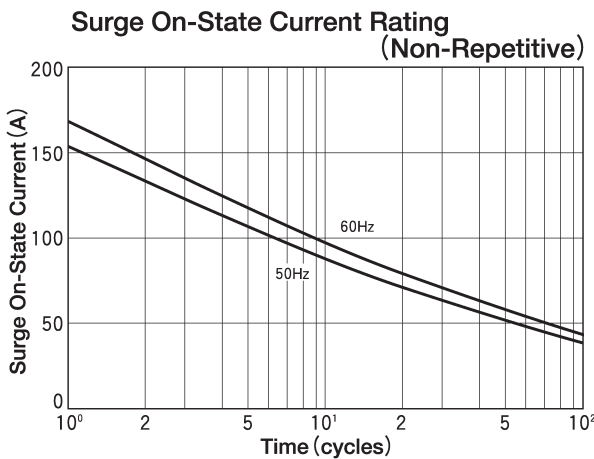
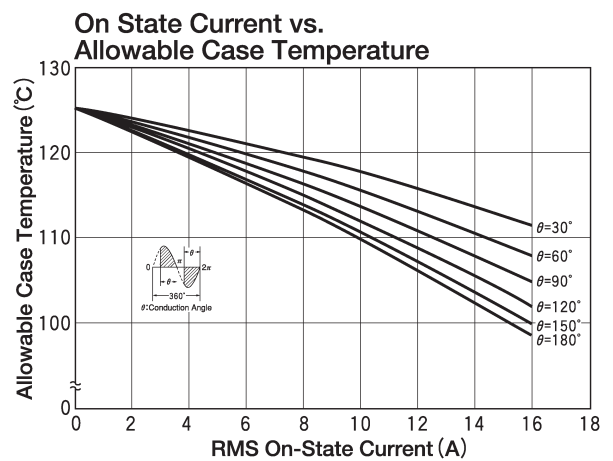
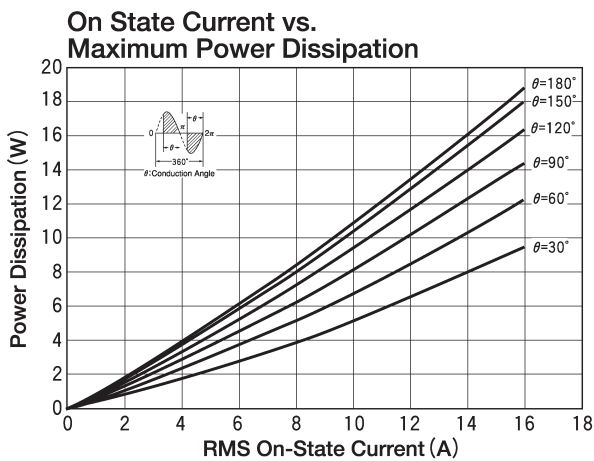
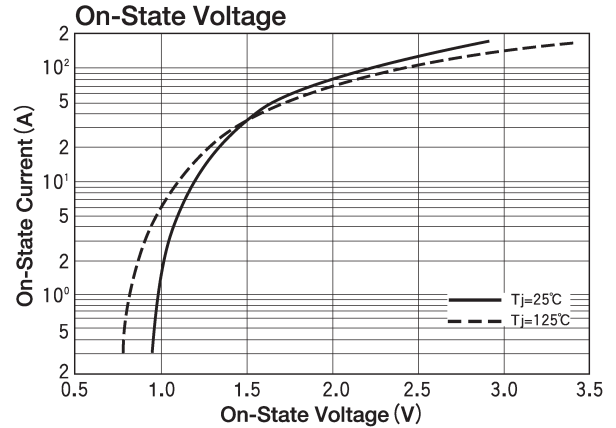
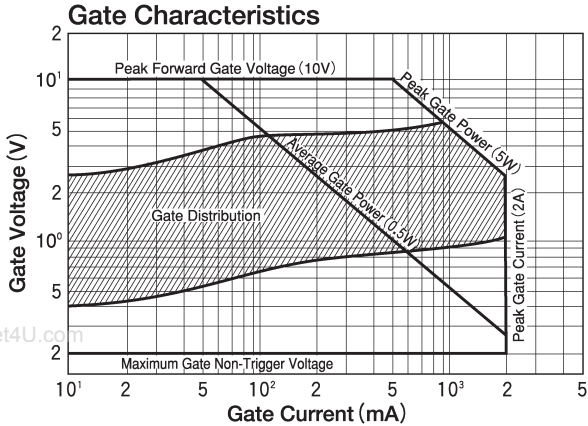
Symbol	Item	Ratings		Unit
		TMG16C60		
V_{DRM}	Repetitive Peak Off-State Voltage	600		V

Symbol	Item	Conditions	Ratings	Unit
$I_{T(RMS)}$	R.M.S. On-State Current	$T_c=98^\circ\text{C}$	16	A
I_{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, peak, non-repetitive	155/170	A
I^2t	I^2t	Value for one cycle of surge current	120	A^2S
P_{GM}	Peak Gate Power Dissipation		5	W
$P_G(AV)$	Average Gate Power Dissipation		0.5	W
I_{GM}	Peak Gate Current		2	A
V_{GM}	Peak Gate Voltage		10	V
T_j	Operating Junction Temperature		$-40\sim+125$	$^\circ\text{C}$
T_{stg}	Storage Temperature		$-40\sim+125$	$^\circ\text{C}$
	Mass		2	g

Electrical Characteristics

Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
I_{DRM}	Reptitive Peak Off-State Current	$V_D=V_{DRM}$, Single phase, half wave, $T_j=125^\circ\text{C}$			2	mA
V_{TM}	Peak On-State Voltage	$I_T=20\text{A}$, Inst. measurement			1.4	V
I_{GT1}^+	Gate Trigger Current	$V_D=6\text{V}$, $R_L=10\ \Omega$	1		30	mA
I_{GT1}^-			2		30	
I_{GT3}^+			3		—	
I_{GT3}^-			4		30	
V_{GT1}^+	Gate Trigger Voltage	$V_D=6\text{V}$, $R_L=10\ \Omega$	1		1.5	V
V_{GT1}^-			2		1.5	
V_{GT3}^+			3		—	
V_{GT3}^-			4		1.5	
V_{GD}	Non-Trigger Gate Voltage	$T_j=125^\circ\text{C}$, $V_D=1/2 V_{DRM}$	0.2			V
$(dv/dt)_c$	Critical Rate of Rise off-State Voltage at commutation	$T_j=125^\circ\text{C}$, $(di/dt)_c=-8\text{A/ms}$, $V_D=2/3 V_{DRM}$	10			$\text{V}/\mu\text{s}$
I_H	Holding Current			25		mA
$R_{th(j-c)}$	Thermal Impedance	Junction to case			1.4	$^\circ\text{C}/\text{W}$

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TRIAC (ISOLATED TYPE)

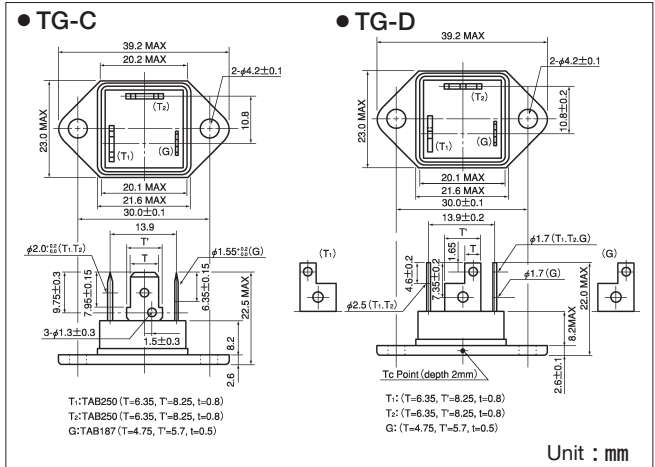
TG16C/D



UL;E76102 (M)

TG16C/D are isolated molded triacs suitable for wide range of applications like copier, microwave oven, solid state switch, motor control, light control and heater control.

- $I_T(AV)$ 16A
- High surge capability 160A
- Isolated Nounting (AC2500V)
- Tab Terminals



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Maximum Ratings

(T_j=25°C unless otherwise specified)

Symbol	Item	Ratings		Unit
		TG16C40	TG16C60	
V _{DRM}	Repetitive Peak Off-State Voltage	400	600	V

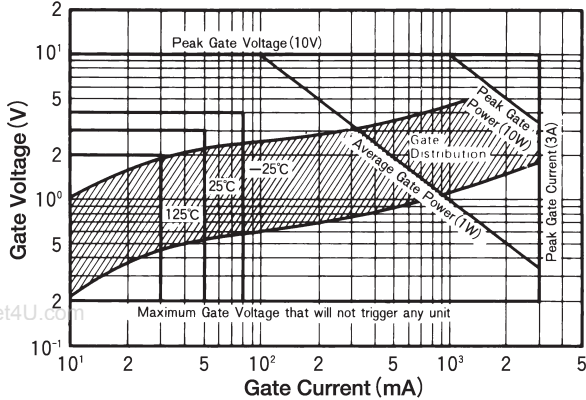
Symbol	Item	Conditions	Ratings	Unit
I _{T(RMS)}	R.M.S. On-State Current	T _c =83°C	16	A
I _{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, peak, non-repetitive	140/160	A
I ² t	I ² t	Value for one cycle of surge current	106	A ² S
P _{GM}	Peak Gate Power Dissipation		10	W
P _{G(AV)}	Average Gate Power Dissipation		1	W
I _{GM}	Peak Gate Current		3	A
V _{GM}	Peak Gate Voltage		10	V
di/dt	Critical Rate of Rise of On-State Current	I _G =100mA, T _j =25°C, V _D =1/2V _{DRM} , diG/dt=1A/μs	50	A/μs
T _j	Operating Junction Temperature		-25~+125	°C
T _{stg}	Storage Temperature		-40~+125	°C
V _{ISO}	Isolation Breakdown Voltage (R.M.S.)	A.C.1 minute	2500	V
	Mounting Torque (M4)	Recommended Value 1.0~1.4 (10~14)	1.5 (15)	kgf·cm
	Mass	Typical value (Excluding bolt, nut and wrapping material)	23	g

Electrical Characteristics

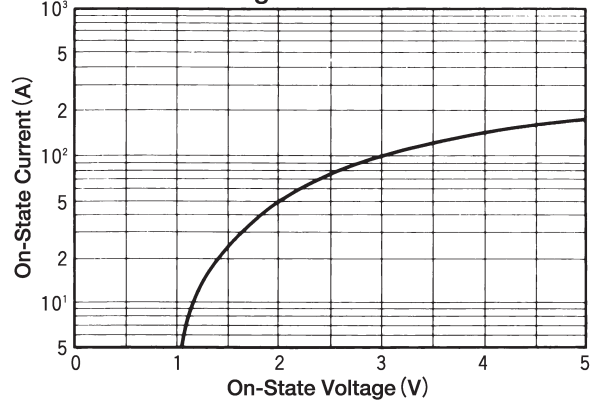
Symbol	Item	Conditions	Ratings	Unit
I _{DRM}	Reptitive Peak Off-State Current, max	V _D =V _{DRM} , Single phase, half wave, T _j =125°C	3	mA
V _{TM}	Peak On-State Voltage, max	On-State Current (√2×I _{T(RMS)}), Inst. measurement	1.5	V
I _{GT1} ⁺	Gate Trigger Current, max	T _j =25°C, I _T =1A, V _D =6V	50	mA
I _{GT1} ⁻		T _j =25°C, I _T =1A, V _D =6V	50	
I _{GT3} ⁺		—	—	
I _{GT3} ⁻		T _j =25°C, I _T =1A, V _D =6V	50	
V _{GT1} ⁺	Gate Trigger Voltage, max	T _j =25°C, I _T =1A, V _D =6V	3	V
V _{GT1} ⁻		T _j =25°C, I _T =1A, V _D =6V	3	
V _{GT3} ⁺		—	—	
V _{GT3} ⁻		T _j =25°C, I _T =1A, V _D =6V	3	
V _{GD}	Non-Trigger Gate Voltage, min	T _j =125°C, V _D =1/2V _{DRM}	0.2	V
t _{gt}	Turn On Time, max.	I _{T(RMS)} , I _G =100mA, V _D =1/2V _{DRM} , T _j =25°C, diG/dt=1A/μs	10	V
dv/dt	Critical Rate of Rise on-State Voltage, min.	T _j =125°C, V _D =2/3V _{DRM} , Exponential wave.	50	V/μs
(dv/dt) _c	Critical Rate of Rise off-State Voltage at commutation, min	T _j =125°C, V _D =2/3V _{DRM} , (di/dt) _c =8A/ms	6	V/μs
I _H	Holding Current, typ.	T _j =25°C	30	mA
R _{th(j-c)}	Thermal Impedance, max	Junction to case	2.0	°C/W

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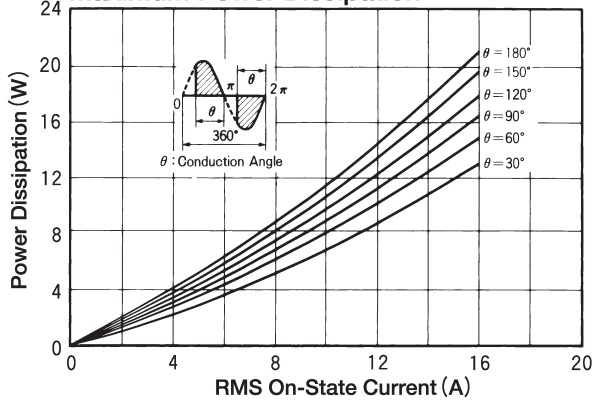
Gate Characteristics



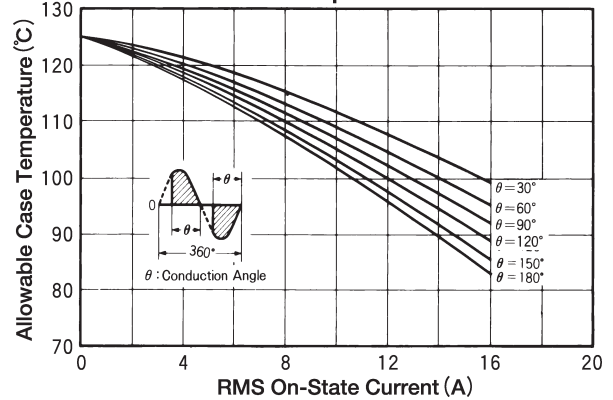
On-State Voltage



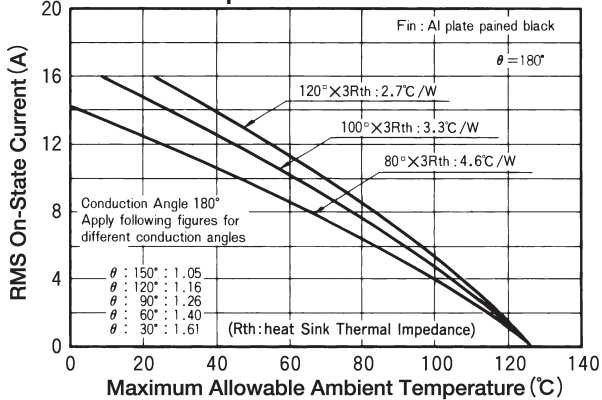
On State Current vs. Maximum Power Dissipation



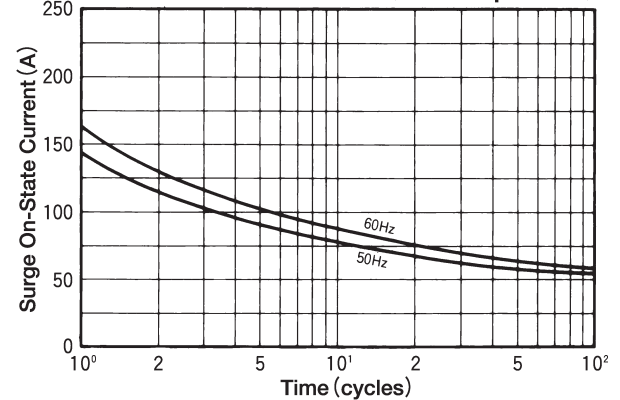
On State Current vs. Allowable Case Temperature



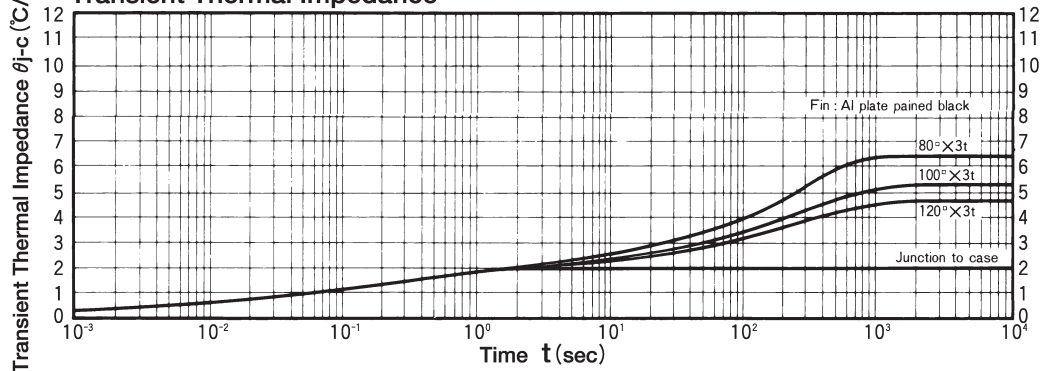
Ambient temp. vs. RMS On-State Current



Surge On-State Current Rating (Non-Repetitive)



Transient Thermal Impedance



TRIAC (ISOLATED TYPE)

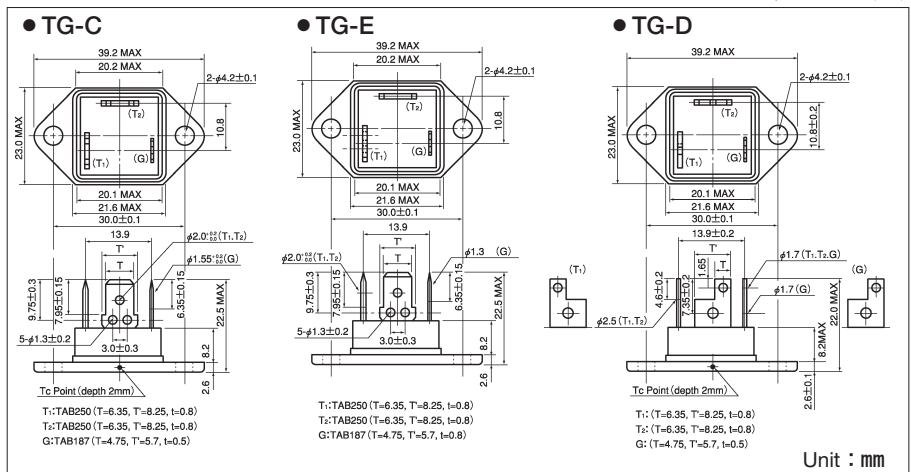
TG25C/E/D



UL;E76102 (M)

TG25C/E/D are isolated molded triacs suitable for wide range of applications like copier, microwave oven, solid state switch, motor control, light control and heater control.

- I_{T(AV)} 25A
- High surge capability 250A
- Isolated Nounting (AC2500V)
- Tab Terminals



Maximum Ratings

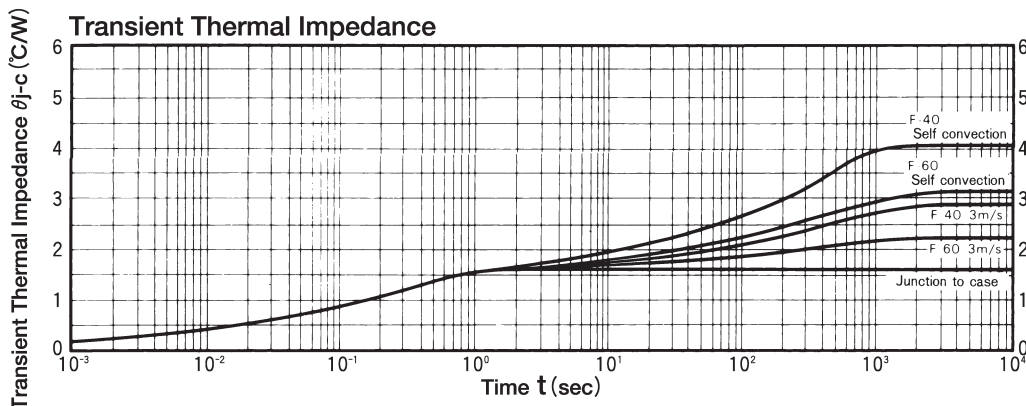
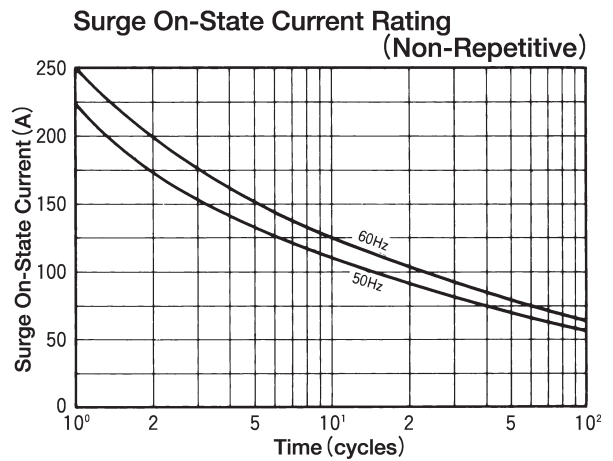
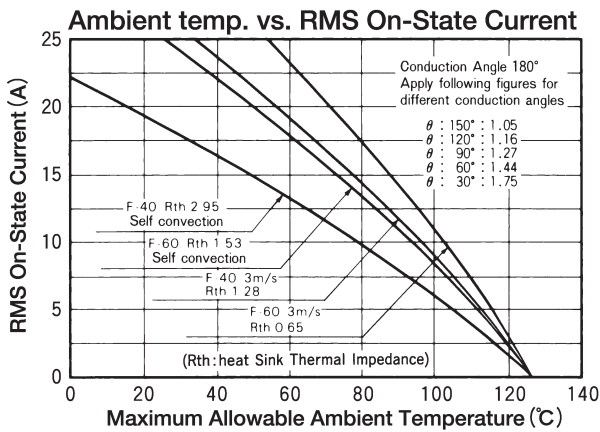
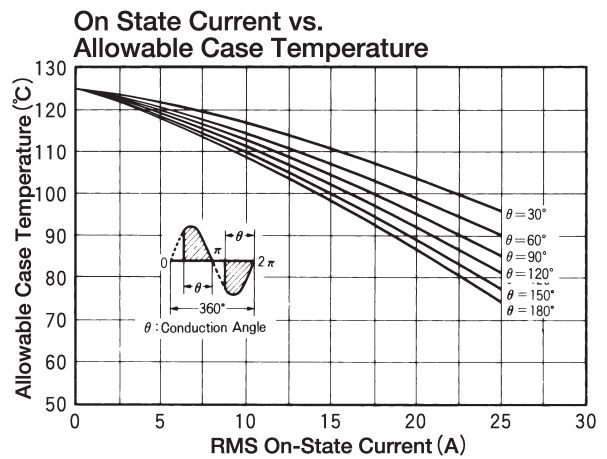
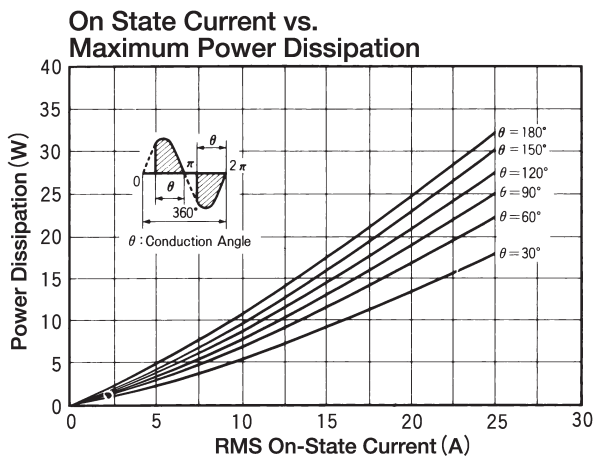
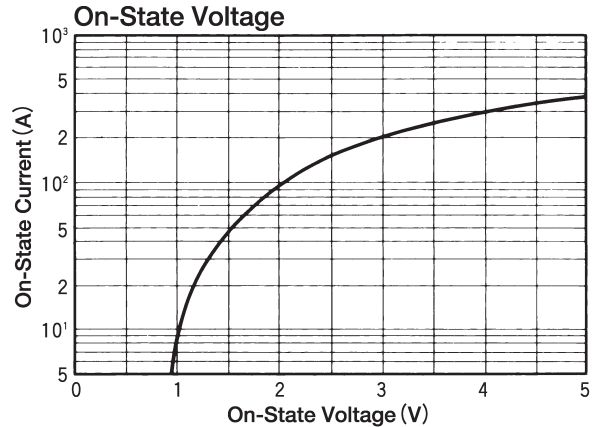
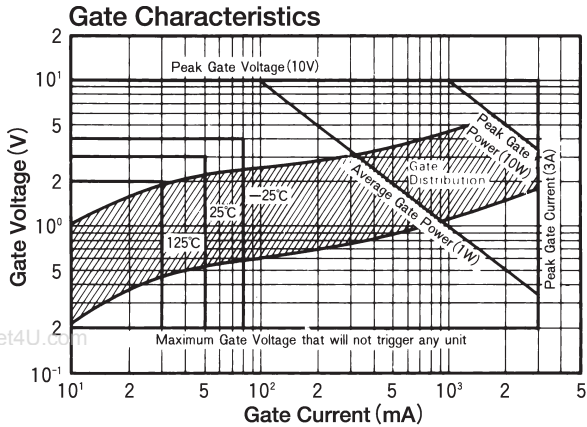
(T_j=25°C unless otherwise specified)

Symbol	Item	Ratings		Unit
		TG25C40	TG25C60	
V _{DRM}	Repetitive Peak Off-State Voltage	400	600	V

Symbol	Item	Conditions	Ratings	Unit
I _{T(RMS)}	R.M.S. On-State Current	T _c =74°C	25	A
I _{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, peak, non-repetitive	220/250	A
I ² t	I ² t	Value for one cycle of surge current	260	A ² S
P _{GM}	Peak Gate Power Dissipation		10	W
P _{G(AV)}	Average Gate Power Dissipation		1	W
I _{GM}	Peak Gate Current		3	A
V _{GM}	Peak Gate Voltage		10	V
di/dt	Critical Rate of Rise of On-State Current	I _G =100mA, T _j =25°C, V _D =1/2V _{DRM} , di _G /dt=1A/μs	50	A/μs
T _j	Operating Junction Temperature		-25~+125	°C
T _{stg}	Storage Temperature		-40~+125	°C
V _{ISO}	Isolation Breakdown Voltage (R.M.S.)	A.C.1 minute	2500	V
	Mounting Torque (M4)	Recommended Value 1.0~1.4 (10~14)	1.5 (15)	kgf·cm
	Mass	Typical value (Excluding bolt, nut and wrapping material)	27	g

Electrical Characteristics

Symbol	Item	Conditions	Ratings	Unit
I _{DRM}	Reptitive Peak Off-State Current, max	V _D =V _{DRM} , Single phase, half wave, T _j =125°C	5	mA
V _{TM}	Peak On-State Voltage, max	On-State Current (√2×I _{T(RMS)}), Inst. measurement	1.4	V
I _{GT1} ⁺	Gate Trigger Current, max	T _j =25°C, I _T =1A, V _D =6V	50	mA
I _{GT1} ⁻		T _j =25°C, I _T =1A, V _D =6V	50	
I _{GT3} ⁺		—	—	
I _{GT3} ⁻		T _j =25°C, I _T =1A, V _D =6V	50	
V _{GT1} ⁺	Gate Trigger Voltage, max	T _j =25°C, I _T =1A, V _D =6V	3	V
V _{GT1} ⁻		T _j =25°C, I _T =1A, V _D =6V	3	
V _{GT3} ⁺		—	—	
V _{GT3} ⁻		T _j =25°C, I _T =1A, V _D =6V	3	
V _{GD}	Non-Trigger Gate Voltage, min	T _j =125°C, V _D =1/2V _{DRM}	0.2	V
t _{gt}	Turn On Time, max.	I _{T(RMS)} , I _G =100mA, V _D =1/2V _{DRM} , T _j =25°C, di _G /dt=1A/μs	10	V
dv/dt	Critical Rate of Rise on-State Voltage, min.	T _j =125°C, V _D =2/3V _{DRM} , Exponential wave.	50	V/μs
(dv/dt) _c	Critical Rate of Rise off-State Voltage at commutation, min	T _j =125°C, V _D =2/3V _{DRM} , (di/dt) _c =15A/ms	6	V/μs
I _H	Holding Current, typ.	T _j =25°C	30	mA
R _{th(j-c)}	Thermal Impedance, max	Junction to case	1.6	°C/W



TRIAC (ISOLATED TYPE)

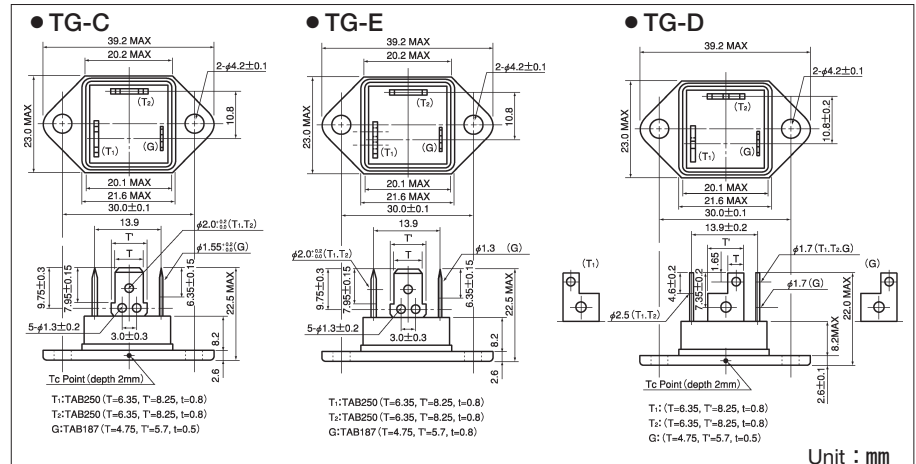
TG35C/E/D



UL;E76102 (M)

TG35C/E/D are isolated molded triacs suitable for wide range of applications like copier, microwave oven, solid state switch, motor control, light control and heater control.

- I_{T(AV)} 35A
- High surge capability 330A
- Isolated Nounting (AC2500V)
- Tab Terminals



Maximum Ratings

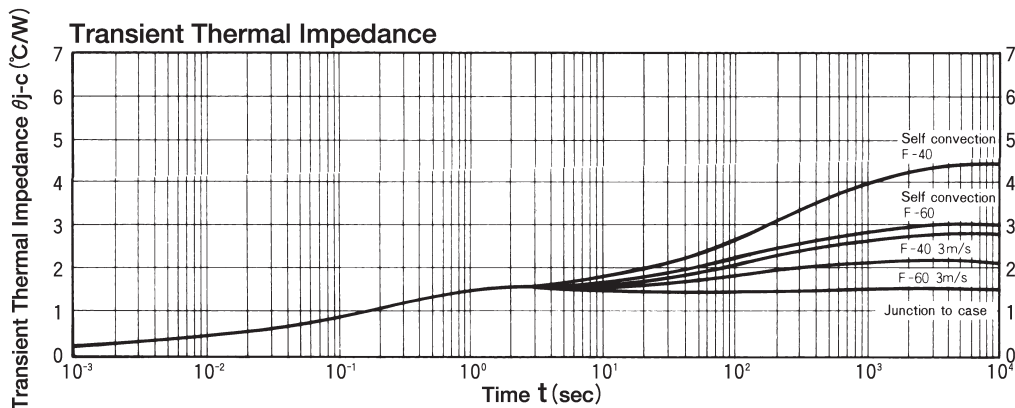
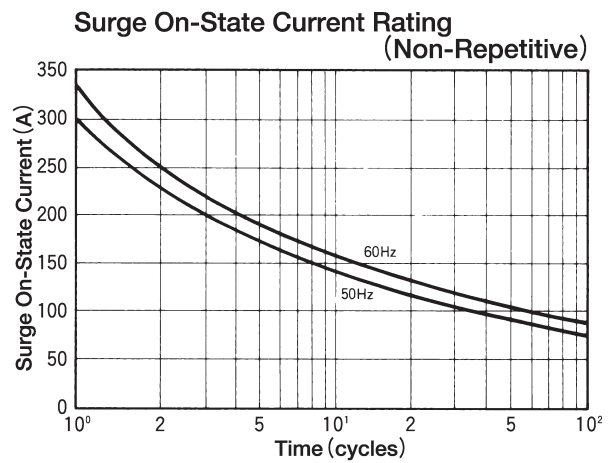
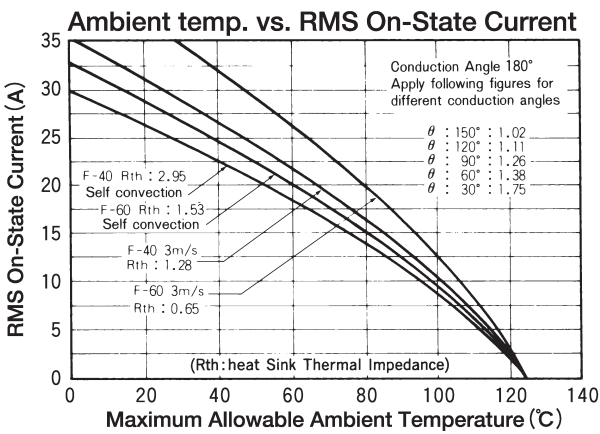
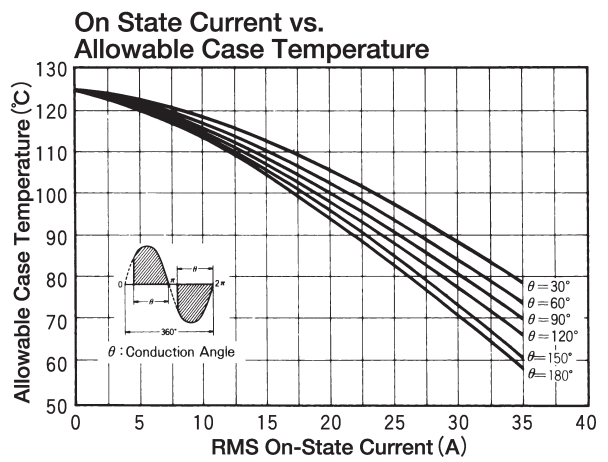
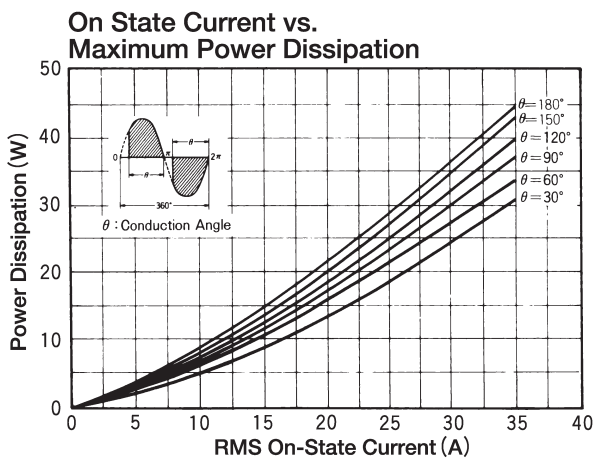
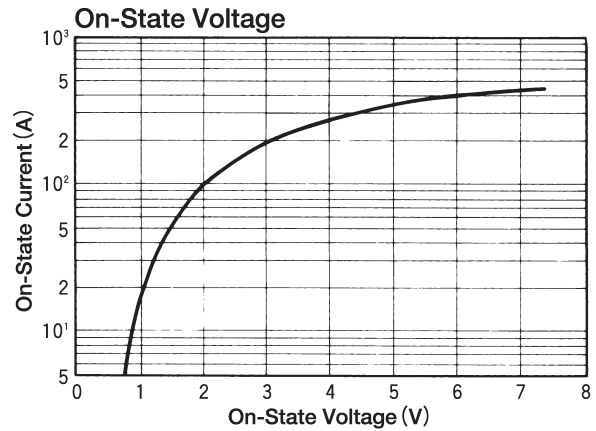
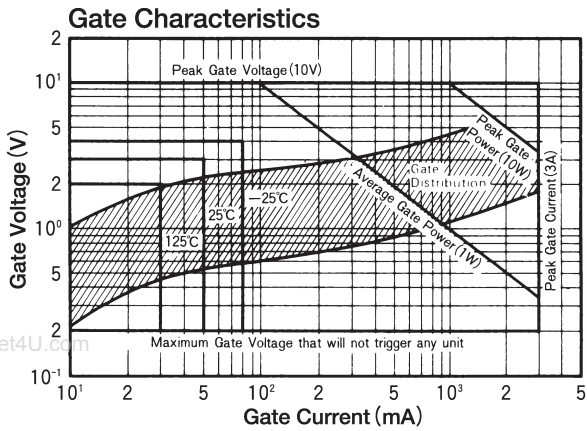
(T_j=25°C unless otherwise specified)

Symbol	Item	Ratings		Unit
		TG35C40	TG35C60	
V _{DRM}	Repetitive Peak Off-State Voltage	400	600	V

Symbol	Item	Conditions	Ratings	Unit
I _{T(RMS)}	R.M.S. On-State Current	T _c =58°C	35	A
I _{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, peak, non-repetitive	300/330	A
I ² t	I ² t	Value for one cycle of surge current	450	A ² S
P _{GM}	Peak Gate Power Dissipation		10	W
P _{G(AV)}	Average Gate Power Dissipation		1	W
I _{GM}	Peak Gate Current		3	A
V _{GM}	Peak Gate Voltage		10	V
di/dt	Critical Rate of Rise of On-State Current	I _G =100mA, T _j =25°C, V _D =1/2V _{DRM} , di _G /dt=1A/μs	50	A/μs
T _j	Operating Junction Temperature		-25~+125	°C
T _{stg}	Storage Temperature		-40~+125	°C
V _{ISO}	Isolation Breakdown Voltage (R.M.S.)	A.C.1 minute	2500	V
	Mounting Torque (M4)	Recommended Value 1.0~1.4 (10~14)	1.5 (15)	kgf·cm
	Mass	Typical value (Excluding bolt, nut and wrapping material)	23	g

Electrical Characteristics

Symbol	Item	Conditions	Ratings	Unit
I _{DRM}	Reptitive Peak Off-State Current, max	V _D =V _{DRM} , Single phase, half wave, T _j =125°C	5	mA
V _{TM}	Peak On-State Voltage, max	On-State Current (√2×I _{T(RMS)}), Inst. measurement	1.4	V
I _{GT1} ⁺	Gate Trigger Current, max	T _j =25°C, I _T =1A, V _D =6V	50	mA
I _{GT1} ⁻		T _j =25°C, I _T =1A, V _D =6V	50	
I _{GT3} ⁺		—	—	
I _{GT3} ⁻		T _j =25°C, I _T =1A, V _D =6V	50	
V _{GT1} ⁺	Gate Trigger Voltage, max	T _j =25°C, I _T =1A, V _D =6V	3	V
V _{GT1} ⁻		T _j =25°C, I _T =1A, V _D =6V	3	
V _{GT3} ⁺		—	—	
V _{GT3} ⁻		T _j =25°C, I _T =1A, V _D =6V	3	
V _{GD}	Non-Trigger Gate Voltage, min	T _j =125°C, V _D =1/2V _{DRM}	0.2	V
t _{gt}	Turn On Time, max.	I _{T(RMS)} , I _G =100mA, V _D =1/2V _{DRM} , T _j =25°C, di _G /dt=1A/μs	10	V
dv/dt	Critical Rate of Rise on-State Voltage, min.	T _j =125°C, V _D =2/3V _{DRM} , Exponential wave.	20	V/μs
(dv/dt) _c	Critical Rate of Rise off-State Voltage at commutation, min	T _j =125°C, V _D =2/3V _{DRM} , (di/dt) _c =15A/ms	5	V/μs
I _H	Holding Current, typ.	T _j =25°C	30	mA
R _{th(j-c)}	Thermal Impedance, max	Junction to case	1.5	°C/W



TRIAC (ISOLATED TYPE)

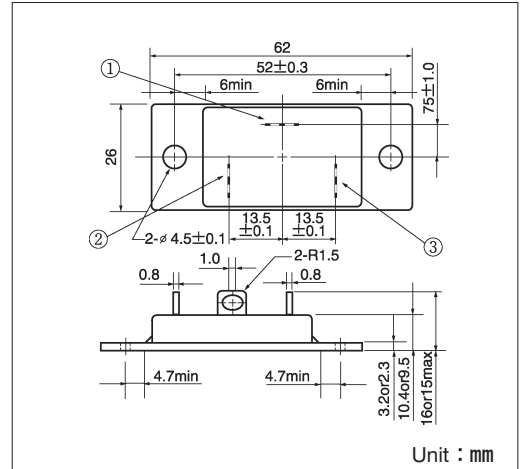
TG70AA40/60

TOP



TG70AA40/60 are isolated mould triac suitable for wide range of applications like copier, microwave oven, solid state switch, motor control, light control and heater control.

- $I_T(AV)$ 70A
- High surge capability 600A
- Isolated Nounting (AC650V)
- Tab Terminals



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Maximum Ratings

($T_j=25^\circ\text{C}$ unless otherwise specified)

Symbol	Item	Ratings		Unit
		TG70AA40	TG70AA60	
V_{DRM}	Repetitive Peak Off-State Voltage	400	600	V
V_{DSM}	Non-Repetitive Peak Off-State Voltage	450	650	V

Symbol	Item	Conditions	Ratings	Unit
$I_T(RMS)$	R.M.S. On-State Current	$T_c=58^\circ\text{C}$	70	A
I_{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, peak, non-repetitive	1080/1200	A
I^2t	I^2t		6000	A^2S
P_{GM}	Peak Gate Power Dissipation		10	W
$P_{G(AV)}$	Average Gate Power Dissipation		1	W
I_{GM}	Peak Gate Current		3	A
V_{GM}	Peak Gate Voltage		10	V
di/dt	Critical Rate of Rise of On-State Current	$I_G=100\text{mA}, T_j=25^\circ\text{C}, V_D=1/2V_{DRM}, dlG/dt=1\text{A}/\mu\text{s}$	50	$\text{A}/\mu\text{s}$
T_j	Operating Junction Temperature		$-40\sim+125$	$^\circ\text{C}$
T_{stg}	Storage Temperature		$-40\sim+125$	$^\circ\text{C}$
V_{ISO}	Isolation Breakdown Voltage (R.M.S.)	A.C.1 minute	2500	V
	Mounting Torque (Mounting M4)	Recommended Value 1.0~1.4 (10~14)	1.5 (15)	$\text{N}\cdot\text{m}$ ($\text{kgf}\cdot\text{cm}$)
	Mass			g

Electrical Characteristics

Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
I_{DRM}	Reptitive Peak Off-State Current	$V_D=V_{DRM}$, Single phase, half wave, $T_j=125^\circ\text{C}$			10	mA
V_{TM}	Peak On-State Voltage	On-State Current, 100A, $I_T=25\text{A}$, Inst. measurement			1.35	V
I_{GT1}^+	Gate Trigger Current	$T_j=25^\circ\text{C}, I_T=1\text{A}, V_D=6\text{V}$			50	mA
I_{GT1}^-		$T_j=25^\circ\text{C}, I_T=1\text{A}, V_D=6\text{V}$			50	
I_{GT3}^+						
I_{GT3}^-		$T_j=25^\circ\text{C}, I_T=1\text{A}, V_D=6\text{V}$			50	
V_{GT1}^+	Gate Trigger Voltage	$T_j=25^\circ\text{C}, I_T=1\text{A}, V_D=6\text{V}$			3	V
V_{GT1}^-		$T_j=25^\circ\text{C}, I_T=1\text{A}, V_D=6\text{V}$			3	
V_{GT3}^+						
V_{GT3}^-		$T_j=25^\circ\text{C}, I_T=1\text{A}, V_D=6\text{V}$			3	
V_{GD}	Non-Trigger Gate Voltage	$T_j=125^\circ\text{C}, V_D=1/2V_{DRM}$	0.2			V
dv/dt	Critical Rate of Rise on-State Voltage,min.	$T_j=125^\circ\text{C}, V_D=2/3V_{DRM}$, Exponential wave.	50			$\text{V}/\mu\text{s}$
$(dv/dt)_c$	Critical Rate of Rise off-State Voltage at commutation	$T_j=125^\circ\text{C}, V_D=2/3V_{DRM}, [di/dt]_c=8\text{A}/\text{ms}$	6			$\text{V}/\mu\text{s}$
I_H	Holding Current	$T_j=25^\circ\text{C}$		50	100	mA
$R_{th(j-c)}$	Thermal Impedance	Junction to case			0.83	$^\circ\text{C}/\text{W}$

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