Discrete & Integration
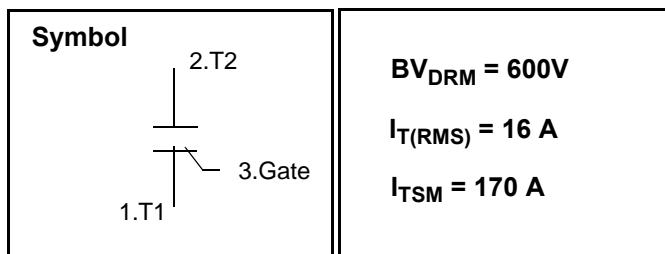## SEMICONDUCTOR

DTF16A60

UL No. E256958

Triac / Standard Gate

Features

Repetitive Peak Off-State Voltage : 600V
R.M.S On-State Current ($I_{T(RMS)}$= 16 A)
High Commutation dv/dt
Isolation Voltage (V_{ISO} = 2500V AC)

Symbol

2.T2

3.Gate

1.T1

BV_{DRM} = 600V

$I_{T(RMS)}$ = 16 A

I_{TSM} = 170 A

TO-220F

1
2
3

General Description

This device is fully isolated package suitable for AC switching application, phase control application such as fan speed and temperature modulation control, industrial and domestic light-ing control and static switching relay.
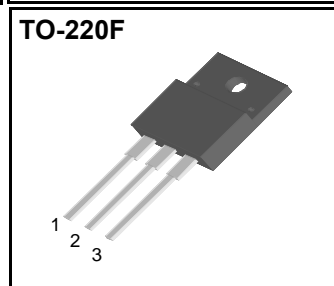
Absolute Maximum Ratings (T_J = 25°C unless otherwise specified)

Symbol	Parameter	Condition	Ratings	Units
V_{DRM}	Repetitive Peak Off-State Voltage	Sine wave, 50 to 60 Hz,Gate Open	600	V
$I_{T(RMS)}$	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^2t	I^2t	t =10ms	120	A^2s
P_{GM}	Peak Gate Power Dissipation	T_C =68 °C, Pulse width 1.0us	5.0	W
$P_{G(AV)}$	Average Gate Power Dissipation	Over any 20ms period	0.5	W
I_{GM}	Peak Gate Current	tp = 20us, T_J=125°C	2.0	A
V_{GM}	Peak Gate Voltage	tp = 20us, T_J=125°C	10	V
V_{ISO}	Isolation Breakdown Voltage(R.M.S.)	A.C. 1 minute	2500	V
T_J	Operating Junction Temperature		- 40 ~ 125	°C
T_{STG}	Storage Temperature		- 40 ~ 150	°C
	Mass		2.0	g

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Electrical Characteristics

Symbol	Items		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			2.0	mA
V_{TM}	Peak On-State Voltage		$I_T = 25$ A, Inst. Measurement			1.4	V
I^+_{GT1}		Gate Trigger Current	$V_D = 6$ V, $R_L = 10$			30	mA
I^-_{GT1}						30	
I^-_{GT3}						30	
V^+_{GT1}		Gate Trigger Voltage	$V_D = 6$ V, $R_L = 10$			1.5	V
V^-_{GT1}						1.5	
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 = -8.0 A/ms, $V_D = 2/3\ V_{DRM}$	10			V/
I_H	Holding Current				25		mA
$R_{th(j-c)}$	Thermal Impedance		Junction to case			3.0	°C/W

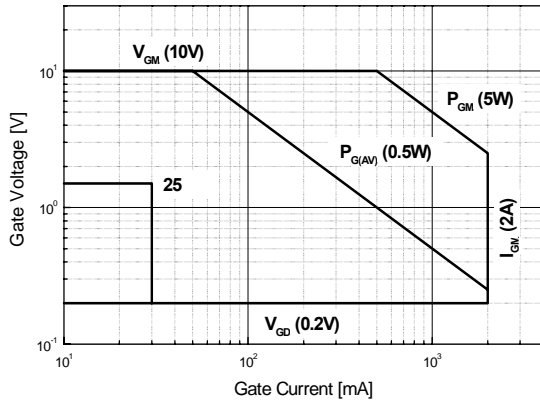# DTF16A60

Fig 1. Gate Characteristics
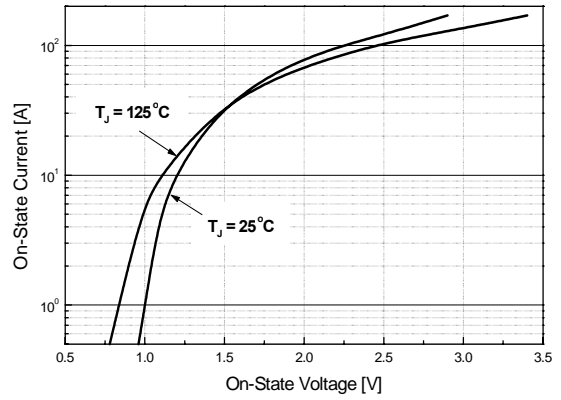

Fig 2. On-State Voltage

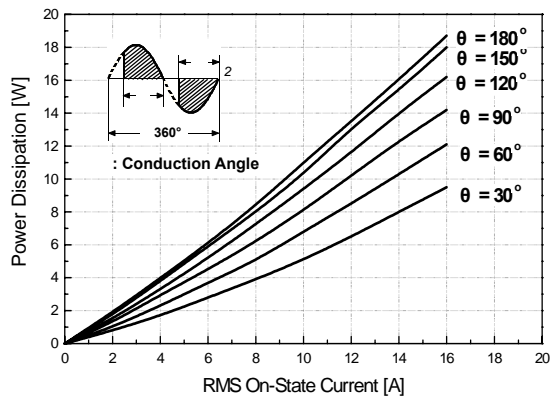## Fig 3. On State Current vs. Maximum Power Dissipation

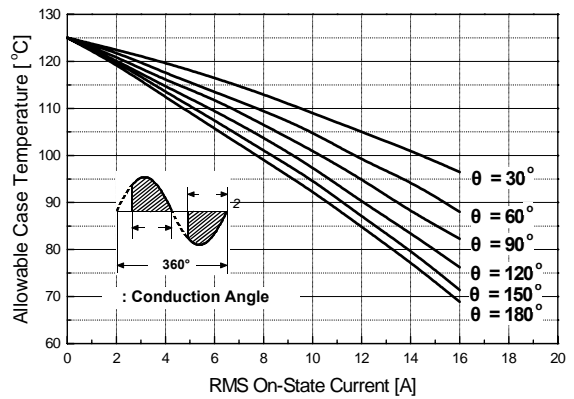

Fig 4. On State Current vs. Allowable Case Temperature

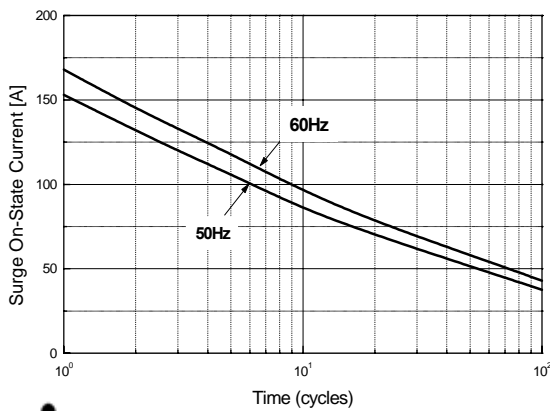## Fig 5. Surge On-State Current Rating (Non-Repetitive)
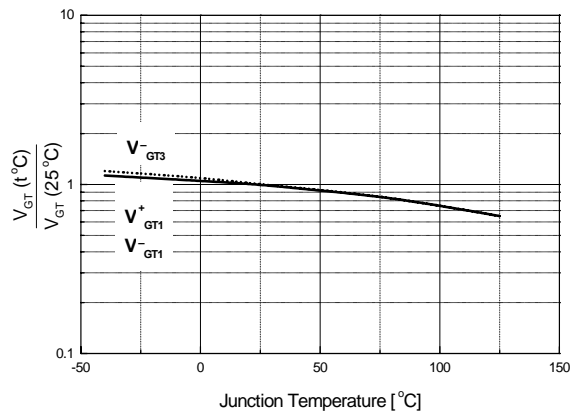

Fig 6. Gate Trigger Voltage vs. Junction Temperature
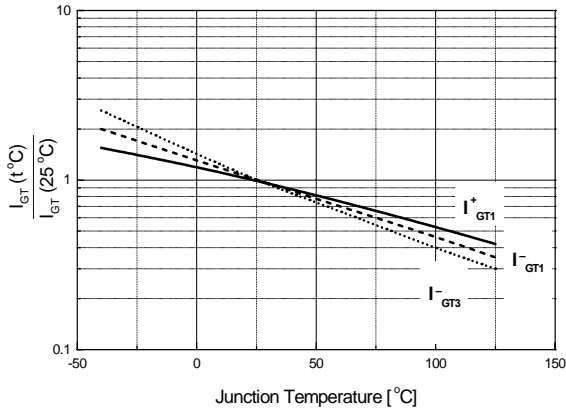

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Fig 7. Gate Trigger Current vs. Junction Temperature
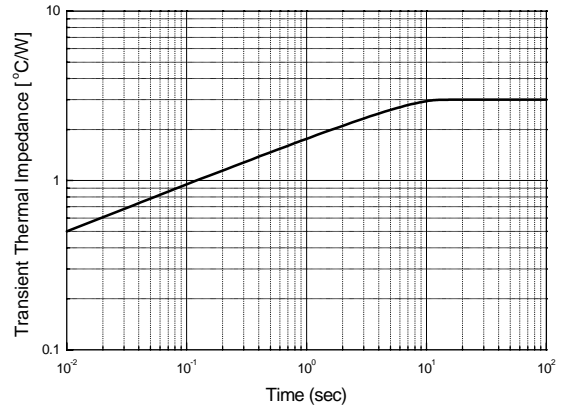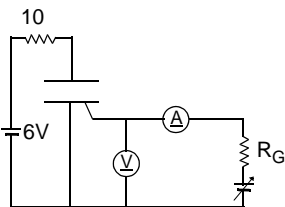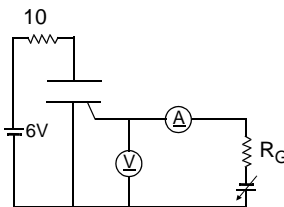

Fig 8. Transient Thermal Impedance

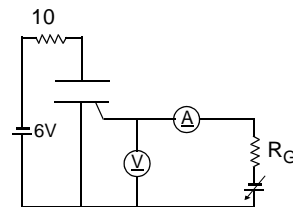**Fig 9. Gate Trigger Characteristics Test Circuit**

Test Procedure

Test Procedure

Test Procedure

DTF16A60

TO-220F Package Dimension

Dim.	mm			Inch		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	10.4		10.6	0.409		0.417
B	6.18		6.44	0.243		0.254
C	9.55		9.81	0.376		0.386
D	13.47		13.73	0.530		0.540
E	6.05		6.15	0.238		0.242
F	1.26		1.36	0.050		0.054
G	3.17		3.43	0.125		0.135
H	1.87		2.13	0.074		0.084
I	2.57		2.83	0.101		0.111
J		2.54			0.100	
K		5.08			0.200	
L	2.51		2.62	0.099		0.103
M	1.25		1.55	0.049		0.061
N	0.45		0.63	0.018		0.025
O	0.6		1.0	0.024		0.039
		3.7			0.146	
1		3.2			0.126	
2		1.5			0.059	

1. T1
2. T2
3. Gate
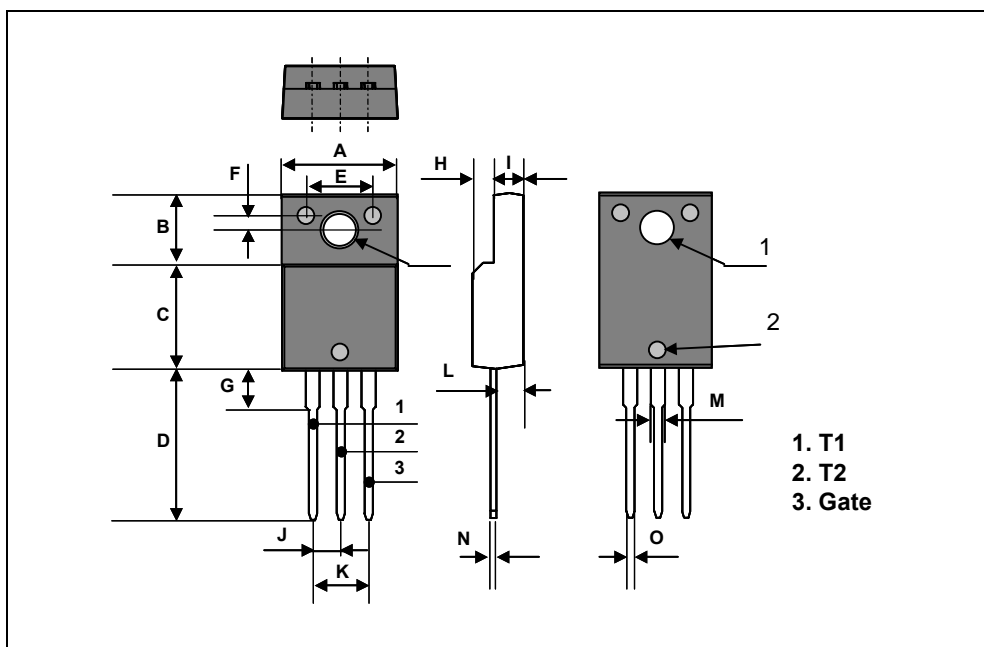
DTF16A60

TO-220F Package Dimension, Forming

Dim.	mm			Inch		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	10.4		10.6	0.409		0.417
B	6.18		6.44	0.243		0.254
C	9.55		9.81	0.376		0.386
D	8.4		8.66	0.331		0.341
E	6.05		6.15	0.238		0.242
F	1.26		1.36	0.050		0.054
G	3.17		3.43	0.125		0.135
H	1.87		2.13	0.074		0.084
I	2.57		2.83	0.101		0.111
J		2.54			0.100	
K		5.08			0.200	
L	2.51		2.62	0.099		0.103
M	1.25		1.55	0.049		0.061
N	0.45		0.63	0.018		0.025
O	0.6		1.0	0.024		0.039
P		5.0			0.197	
		3.7			0.146	
1		3.2			0.126	
2		1.5			0.059	

1. T1
2. T2
3. Gate

6/6

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