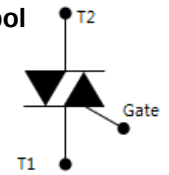
SemiHow
Know-How for Semiconductor

HTA55A160BW
3 Quadrants TRIAC

V_{DRM} = 1600 V
$I_{T(RMS)}$ = 55 A
I_{TSM} = 550 A
$I_{GT(max)}$ = 50mA

Symbol



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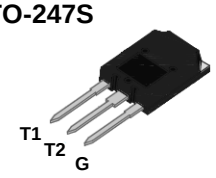

FEATURES

- Repetitive Peak Off-State Voltage : 1600V
- R.M.S On–State Current ($I_{T(RMS)}$ = 55A)
- Gate Trigger Current : 50mA

General Description

HTA55A160BW triacs, with high ability to withstand the shock loading of large current, provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, 3 quadrants products especially recommended for use on inductive load.

Absolute Maximum Ratings (T_J=25℃ unless otherwise specified)

Symbol	Parameter	Conditions	Ratings	Unit
V_{DRM}	Repetitive Peak Off-State Voltage	Sine wave, 50/60Hz, Gate open	1600	V
V_{RRM}	Repetitive Peak Reverse Voltage		1600	V
V_{DSM}	Non Repetitive Peak Off-State Voltage	T_J = 25 ˚C, tp = 10ms	V_{DRM}+100	V
V_{RSM}	Non Repetitive Peak Reverse Voltage		V_{RRM}+100	V
$I_{T(AV)}$	Average On-State Current	Full sine wave, T_C = 73ºC	45	A
$I_{T(RMS)}$	R.M.S. On-State Current		50	A
I_{TSM}	Surge On-State Current	Full cycle, 50Hz, Sine wave, Non repetitive	550	A
I^2t	Fusing Current	t = 10ms	1500	A^2S
dI/dt	Critical Rate of Rise of On-State Current	I_G = 2 x I_{GT} , tr ≤ 100ns, f = 120Hz, T_J = 125 ˚C	100	A/us
I_{GM}	Peak Gate Current	T_J = 125 ˚C, tp = 20us	8	A
P_{GM}	Peak Gate Power Dissipation	T_J = 125 ˚C, tp = 20us	10	W
$P_{G(AV)}$	Average Gate Power Dissipation	T_J = 125 ˚C	2	W
T_J	Operating Junction Temperature		-40~+125	ºC
T_{STG}	Storage Temperature		-40~+150	ºC

Electrical Characteristics (T_C=25℃ unless otherwise specified)

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
I_{DRM}	Repetitive Peak Off-State Current	$V_D = V_{DRM}$	T_C=25°C	-	-	50	uA
			T_C=125°C	-	-	8	mA
I_{RRM}	Repetitive Peak Reverse Current	$V_D = V_{RRM}$	T_C=25°C	-	-	50	uA
			T_C=125°C	-	-	8	mA
I_{GT}	Gate Trigger Current	V_D = 12V, R_L=33Ω	1+, 1-, 3-	-	-	50	mA
V_{GT}	Gate Trigger Voltage	V_D = 12V, R_L=33Ω	1+, 1-, 3-	-	-	1.3	V
I_L	Latching Current	$I_G = 1.2I_{GT}$	1+, 3-			80	mA
			1-			120	mA
I_H	Holding current	I_T= 0.1A		-	-	60	mA
V_{GD}	Non-Trigger Gate Voltage	$V_D = V_{DRM}$, R_L=3.3kΩ, T_J=125°C		0.2	-	-	V
V_{TM}	Peak On-State Voltage	I_T = 80A, tp = 380us		-	-	1.55	V
dv/dt	Critical Rate of Rise of Off-State Voltage	V_D = 2/3 V_{DRM}, T_J=125°C		1000	-	-	V/us
(dv/dt)c	Critical Rate of Rise of Off-State Voltage at Communication	Without snubber T_J=125°C		20	-	-	V/us

Thermal Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$R_{\theta JC}$	Thermal Resistance	Junction to Case			0.65	°C/W

Typical Characteristics

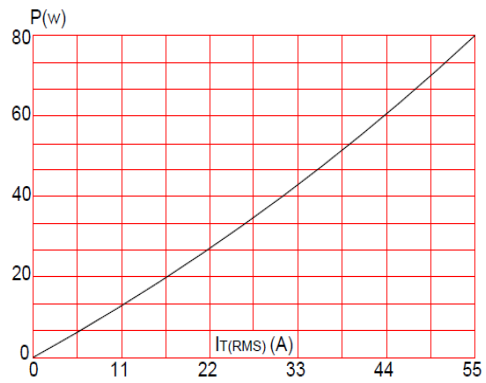

Fig 1. R.M.S. current vs. Power dissipation (Full cycle)

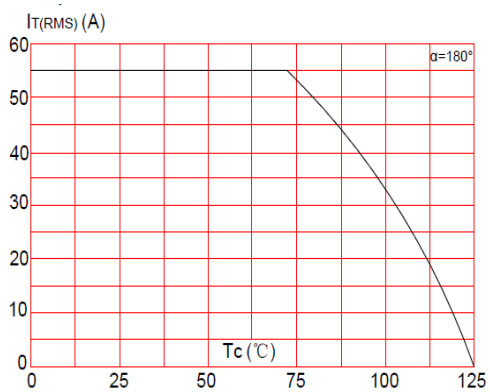

Fig 2. R.M.S. current vs. Case temperature (Full cycle)

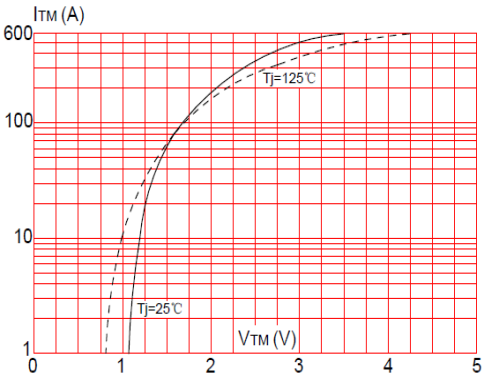

Fig 3. On state characteristics (maximum values)

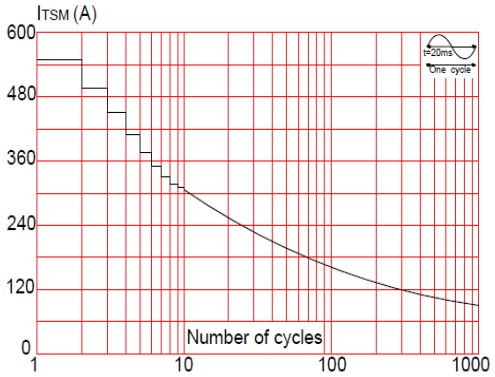

Fig 4. Surge peak on state current versus number of cycle

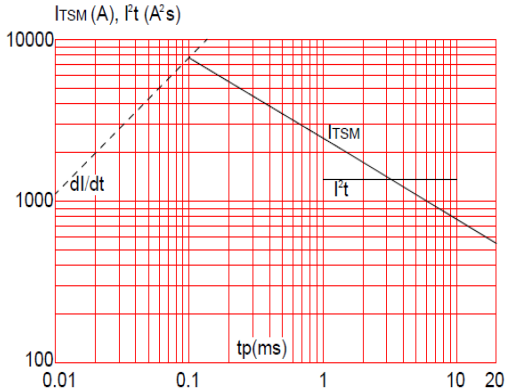

Fig 5. Non repetitive surge peak on state current for a sinusoidal pulse with width tp<10ms, and corresponding value of I²t

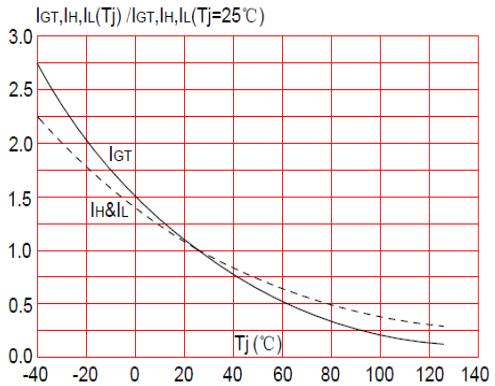

Fig 6. Relative variations of gate trigger current, holding current and latching current Versus junction temperature(typical values)

Package Dimension

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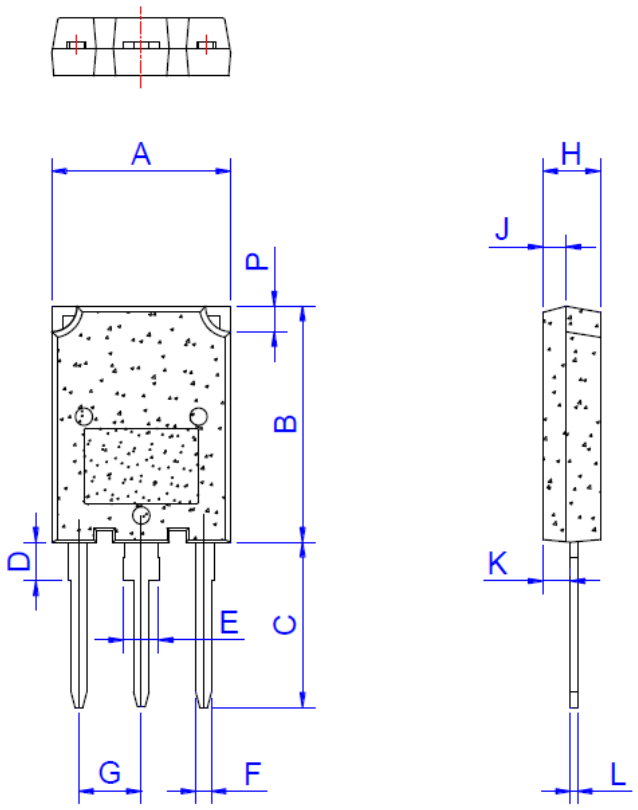

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.1		16.1	0.594		0.634
B	19.8		20.8	0.78		0.819
C	13.8		14.8	0.543		0.583
D	3.00		4.00	0.118		0.157
E	2.75		3.35	0.108		0.132
F	1.30		1.50	0.051		0.059
G	5.10		5.80	0.201		0.228
H	4.50		5.50	0.177		0.217
J	1.45		2.15	0.057		0.085
K	1.90		2.80	0.075		0.110
L	0.55		0.80	0.022		0.031
P	2.00		2.40	0.079		0.094