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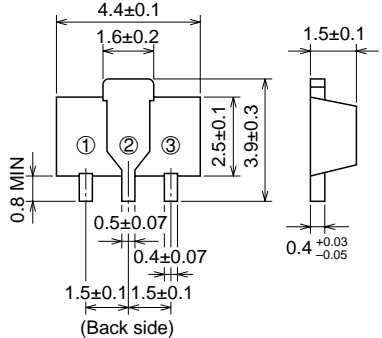
LOW POWER USE
NON-INSULATED TYPE, PLANAR PASSIVATION TYPE

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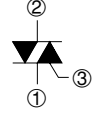


- **IT (RMS)** **0.8A**
- **VDRM** **600V**
- **IFGT I , IRGT I , IRGT III** **5mA**
- **IFGT III** **10mA**

OUTLINE DRAWING Dimensions
in mm



(Back side)



① T1 TERMINAL
② T2 TERMINAL
③ GATE TERMINAL

SOT-89

APPLICATION

Hybrid IC, solid state relay,
control of household equipment such as electric fan · washing machine,
other general purpose control applications

MAXIMUM RATINGS

Symbol	Parameter	Voltage class	
		12 (marked "BF")	
			Unit
VDRM	Repetitive peak off-state voltage *1	600	V
VDSM	Non-repetitive peak off-state voltage *1	720	V

Symbol	Parameter	Conditions	Ratings	Unit
IT (RMS)	RMS on-state current	Commercial frequency, sine full wave 360° conduction, Ta=40°C *3	0.8	A
ITSM	Surge on-state current	60Hz sinewave 1 full cycle, peak value, non-repetitive	8	A
I ² t	I ² t for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	0.26	A ² s
PGM	Peak gate power dissipation		1	W
PG (AV)	Average gate power dissipation		0.1	W
VGM	Peak gate voltage		6	V
IGM	Peak gate current		1	A
Tj	Junction temperature		-40 ~ +125	°C
Tstg	Storage temperature		-40 ~ +125	°C
—	Weight	Typical value	48	mg

*1. Gate open.

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ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test conditions	Limits			Unit	
			Min.	Typ.	Max.		
IDRM	Repetitive peak off-state current	$T_j=125^\circ\text{C}$, V_{DRM} applied	—	—	1.0	mA	
V _{TM}	On-state voltage	$T_c=25^\circ\text{C}$, $I_{\text{TM}}=1.2\text{A}$, Instantaneous measurement	—	—	2.0	V	
V _{FGT I}	Gate trigger voltage *2	$T_j=25^\circ\text{C}$, $V_D=6\text{V}$, $R_L=6\Omega$, $R_G=330\Omega$	I	—	—	2.0	V
V _{RGT I}			II	—	—	2.0	V
V _{RGT III}			III	—	—	2.0	V
V _{FGT III}			IV	—	—	2.0	V
I _{FGT I}	Gate trigger current *2	$T_j=25^\circ\text{C}$, $V_D=6\text{V}$, $R_L=6\Omega$, $R_G=330\Omega$	I	—	—	5	mA
I _{RGT I}			II	—	—	5	mA
I _{RGT III}			III	—	—	5	mA
I _{FGT III}			IV	—	—	10	mA
V _{GD}	Gate non-trigger voltage	$T_j=125^\circ\text{C}$, $V_D=1/2V_{\text{DRM}}$	0.1	—	—	V	
R _{th(j-a)}	Thermal resistance	Junction to case *3	—	—	65	$^\circ\text{C/W}$	
(dv/dt) _c	Critical-rate of rise of off-state commutating voltage *4	$T_j=125^\circ\text{C}$	0.5	—	—	V/ μs	

*2. Measurement using the gate trigger characteristics measurement circuit.

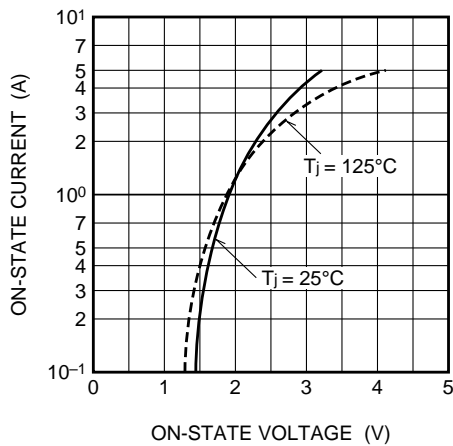
*3. Mounted on 25mm × 25mm × 0.7mm ceramic plate with solder.

*4. Test conditions of the critical-rate of rise of off-state commutating voltage is shown in the table below.

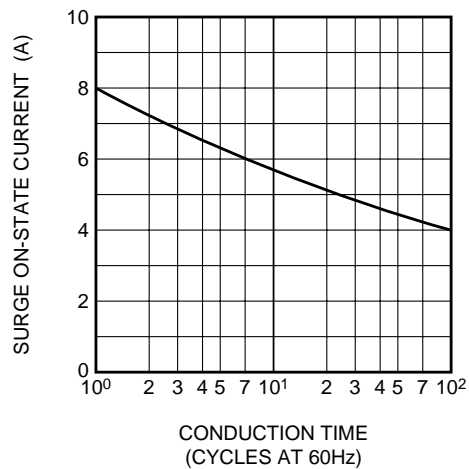
Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature $T_j=125^\circ\text{C}$ 2. Rate of decay of on-state commutating current $(di/dt)_c=-0.4\text{A/ms}$ 3. Peak off-state voltage $V_D=400\text{V}$	

PERFORMANCE CURVES

MAXIMUM ON-STATE CHARACTERISTICS



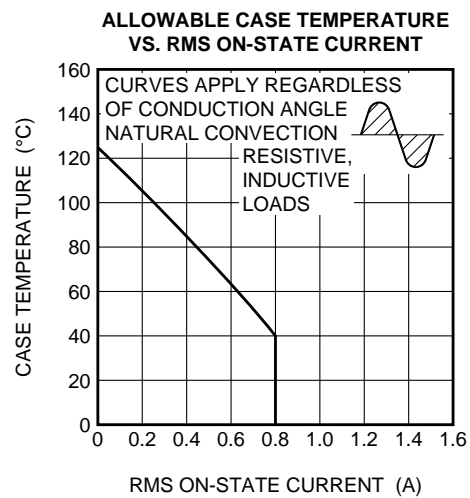
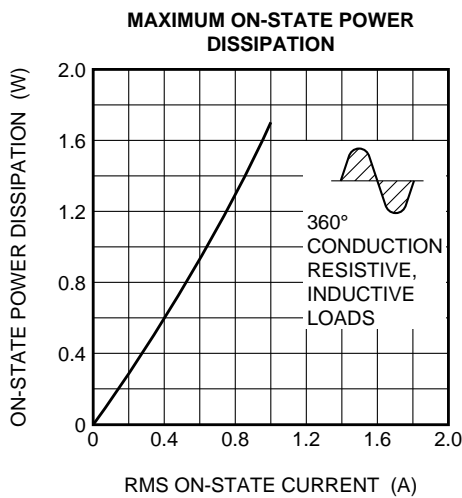
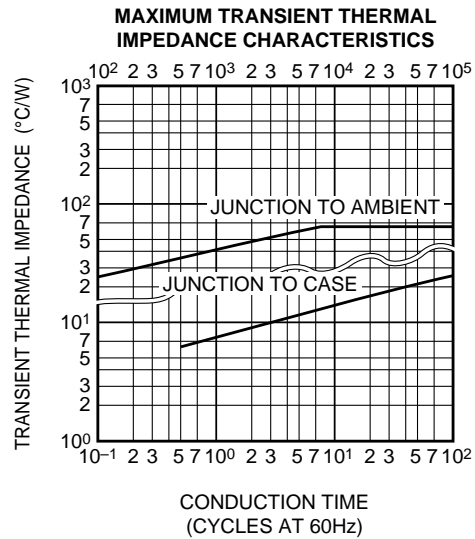
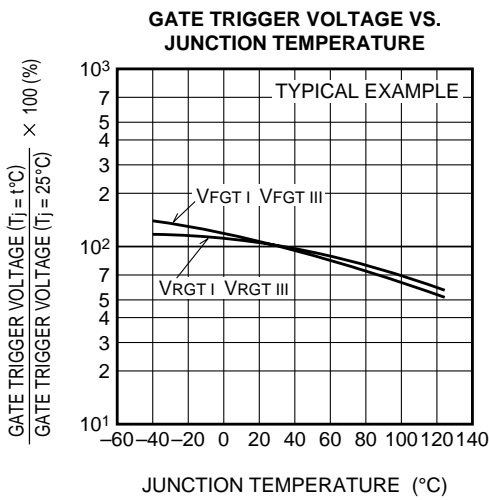
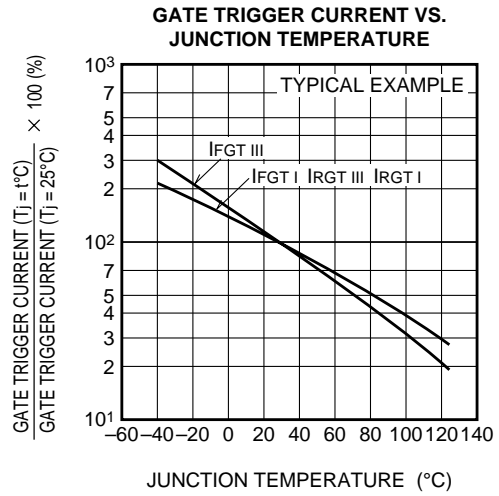
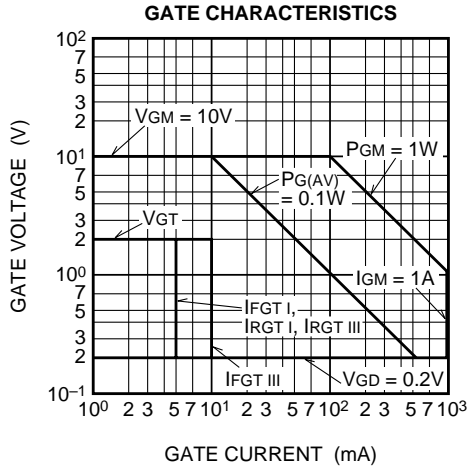
RATED SURGE ON-STATE CURRENT



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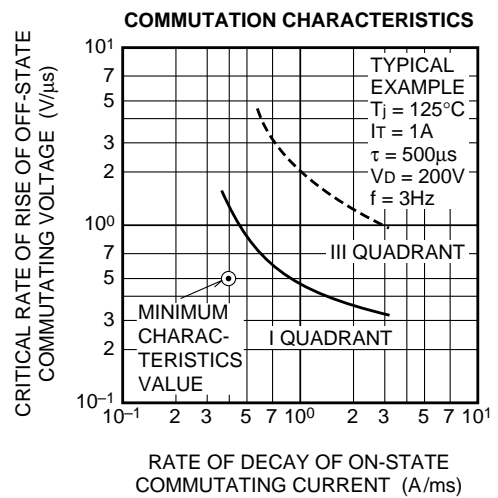
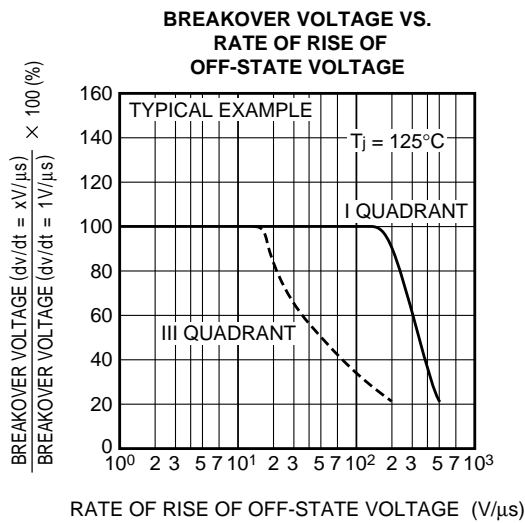
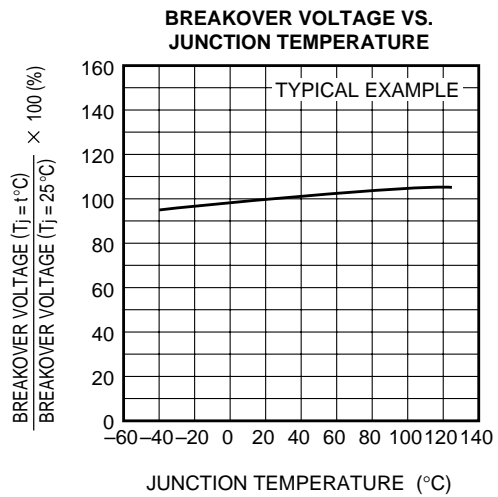
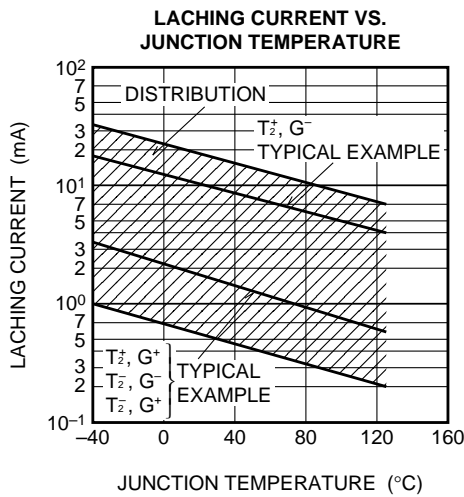
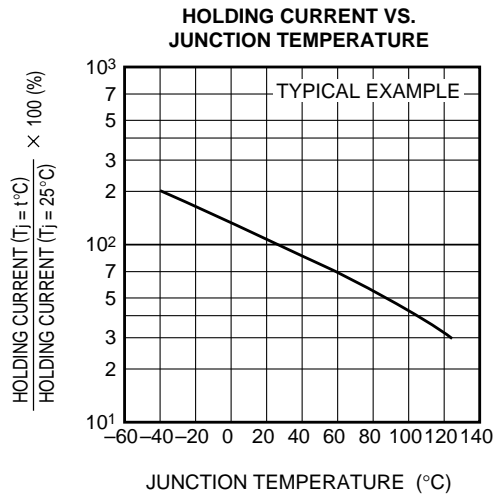
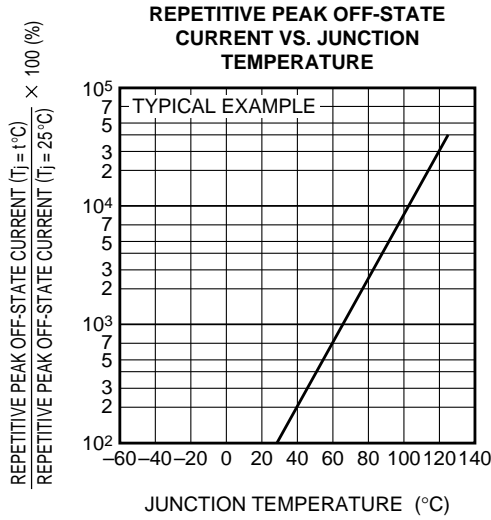
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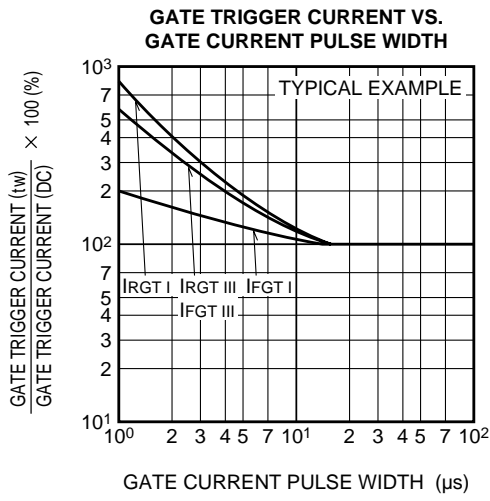
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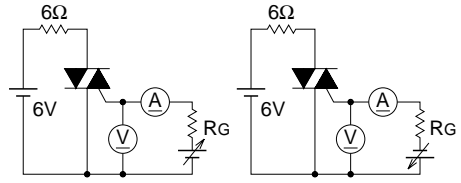
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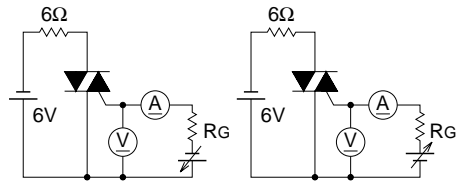


GATE TRIGGER CHARACTERISTICS TEST CIRCUITS



TEST PROCEDURE I

TEST PROCEDURE II



TEST PROCEDURE III

TEST PROCEDURE IV