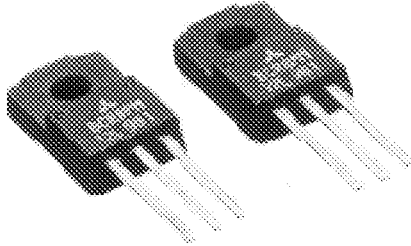


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MEDIUM POWER USE
INSULATED TYPE, PLANAR PASSIVATION TYPE

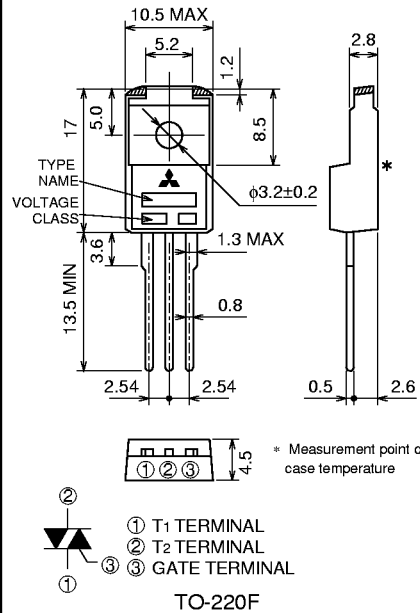
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- **It (RMS)** **8A**
- **VDRM** **400V/600V**
- **IFGT I, IRGT I, IRGT II** **30mA (20mA) *5**
- **Viso** **1500V**
- **UL Recognized: File No. E80276**

OUTLINE DRAWING

Dimensions
in mm



APPLICATION

Switching mode power supply, light dimmer, electric flasher unit,
control of household equipment such as TV sets · stereo · refrigerator · washing machine · infrared
kotatsu · carpet, solenoid drivers, small motor control,
copying machine, electric tool,
other general purpose control applications

MAXIMUM RATINGS

Symbol	Parameter	Voltage class		Unit
		8	12	
VDRM	Repetitive peak off-state voltage *1	400	600	V
VDSM	Non-repetitive peak off-state voltage *1	500	720	V

Symbol	Parameter	Conditions	Ratings	Unit
It (RMS)	RMS on-state current	Commercial frequency, sine full wave 360° conduction, Tc=88°C	8	A
ItSM	Surge on-state current	60Hz sinewave 1 full cycle, peak value, non-repetitive	80	A
Pt	Pt for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	26	A²s
PGM	Peak gate power dissipation		5	W
PG (AV)	Average gate power dissipation		0.5	W
VGM	Peak gate voltage		10	V
IGM	Peak gate current		2	A
Tj	Junction temperature		-40 ~ +125	°C
Tstg	Storage temperature		-40 ~ +125	°C
—	Weight	Typical value	2.0	g
Viso	Isolation voltage	Ta=25°C, AC 1 minute, T1 · T2 · G terminal to case	1500	V

*1. Gate open.

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MEDIUM POWER USE
INSULATED TYPE, PLANAR PASSIVATION TYPE

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I_{DRM}	Repetitive peak off-state current	$T_J=125^{\circ}\text{C}$, V_{DRM} applied	—	—	2.0	mA
V_{TM}	On-state voltage	$T_C=25^{\circ}\text{C}$, $I_{TM}=12\text{A}$, Instantaneous measurement	—	—	1.6	V
$V_{FGT\text{ I}}$	Gate trigger voltage *2	$T_J=25^{\circ}\text{C}$, $V_D=6\text{V}$, $R_L=6\Omega$, $R_G=330\Omega$	—	—	1.5	V
$V_{RGT\text{ I}}$			—	—	1.5	V
$V_{RGT\text{ III}}$			—	—	1.5	V
$I_{FGT\text{ I}}$	Gate trigger current *2	$T_J=25^{\circ}\text{C}$, $V_D=6\text{V}$, $R_L=6\Omega$, $R_G=330\Omega$	—	—	30*5	mA
$I_{RGT\text{ I}}$			—	—	30*5	mA
$I_{RGT\text{ III}}$			—	—	30*5	mA
V_{GD}	Gate non-trigger voltage	$T_J=125^{\circ}\text{C}$, $V_D=1/2V_{DRM}$	0.2	—	—	V
$R_{th(j-c)}$	Thermal resistance	Junction to case *4	—	—	3.7	$^{\circ}\text{C/W}$
$(dv/dt)_c$	Critical-rate of rise of off-state commutating voltage		*3	—	—	V/ μs

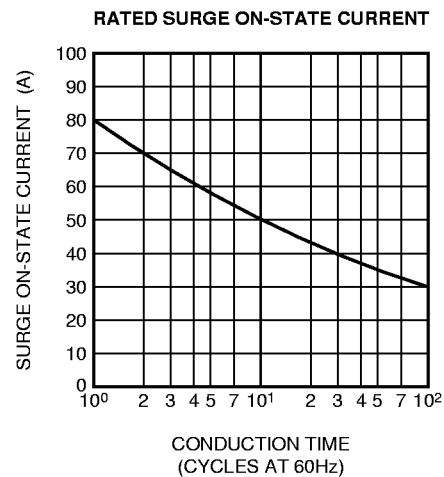
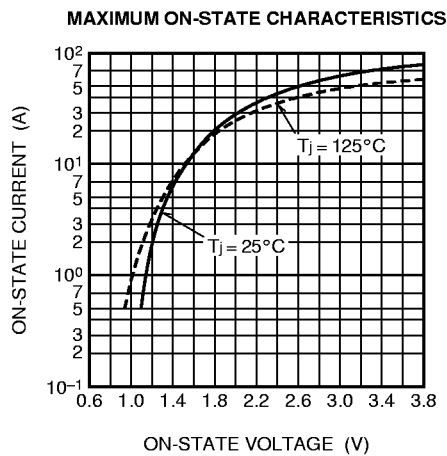
*2. Measurement using the gate trigger characteristics measurement circuit.

*3. The critical-rate of rise of the off-state commutating voltage is shown in the table below.

*4. The contact thermal resistance $R_{th(c-t)}$ in case of greasing is 0.5°C/W .*5. High sensitivity ($I_{GT}\leq 20\text{mA}$) is also available. (IGT item ①)

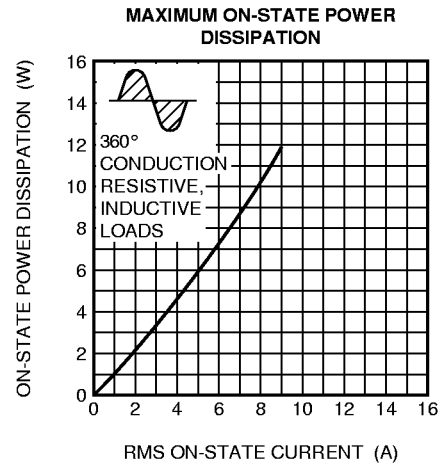
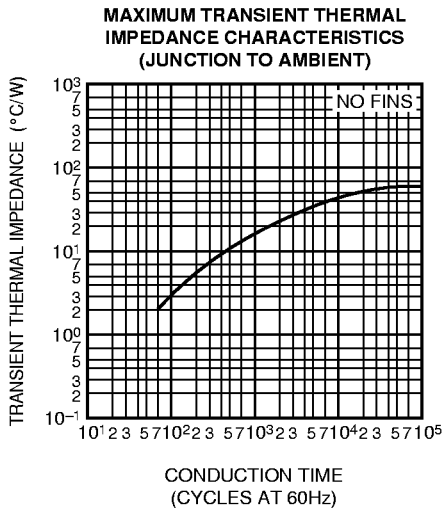
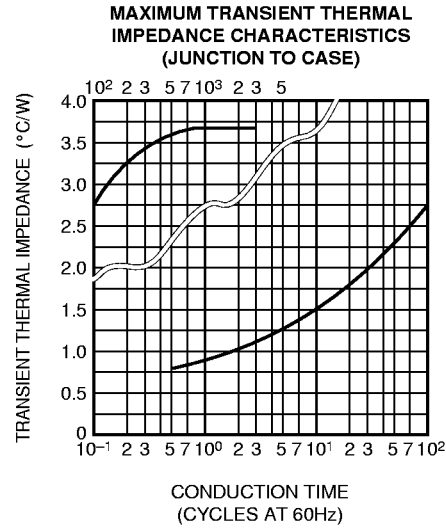
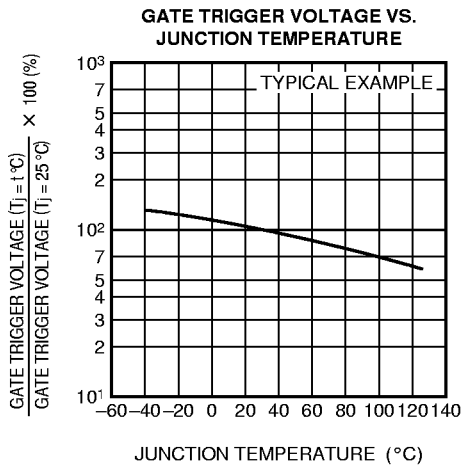
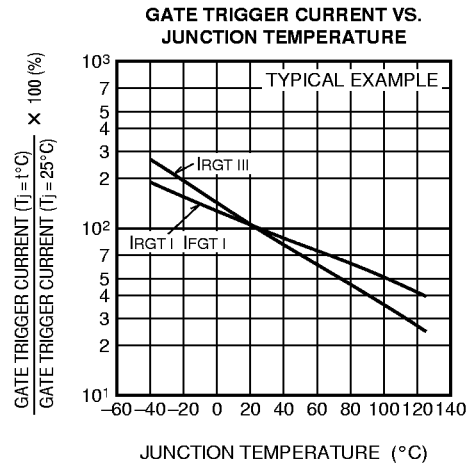
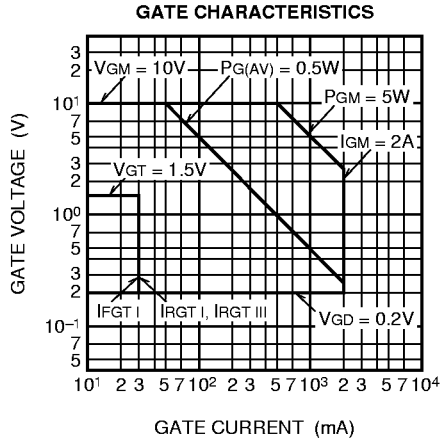
Voltage class	V_{DRM} (V)	$(dv/dt)_c$			Test conditions	Commutating voltage and current waveforms (inductive load)
		Symbol	Min.	Unit		
8	400	R	—	V/ μs	1. Junction temperature $T_J=125^{\circ}\text{C}$ 2. Rate of decay of on-state commutating current $(di/dt)_c=4.0\text{A/ms}$ 3. Peak off-state voltage $V_D=400\text{V}$	
		L	10			
12	600	R	—			
		L	10			

PERFORMANCE CURVES



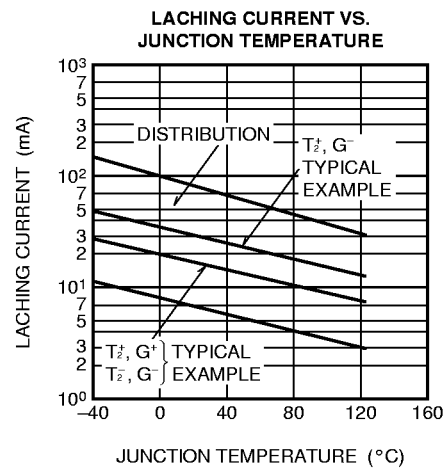
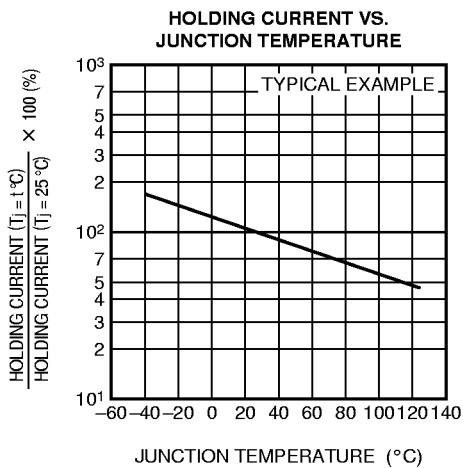
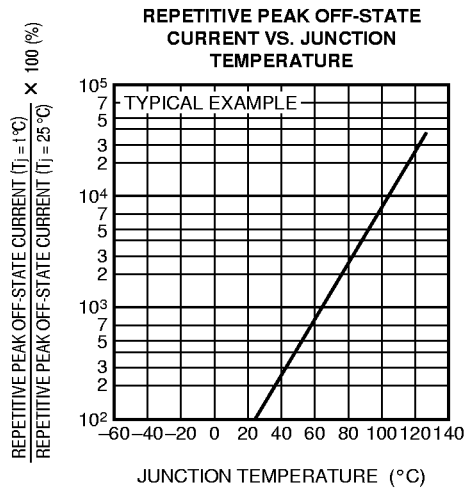
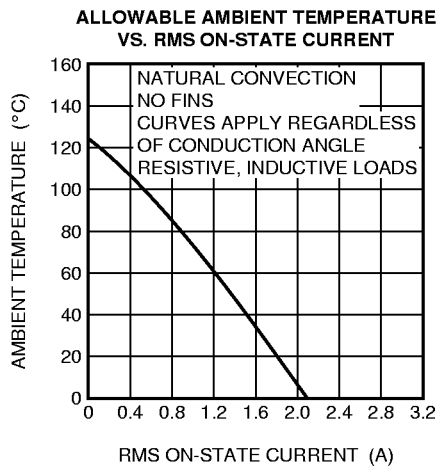
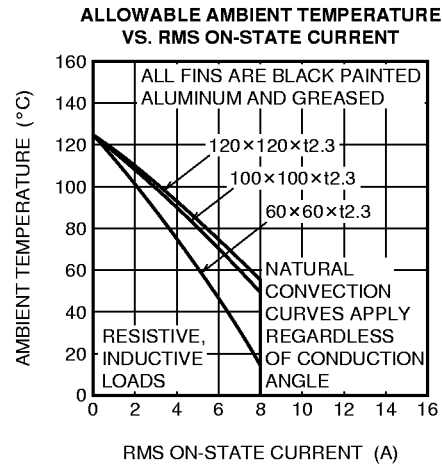
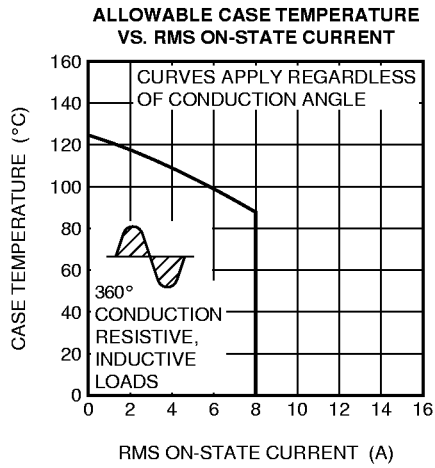
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MEDIUM POWER USE
INSULATED TYPE, PLANAR PASSIVATION TYPE



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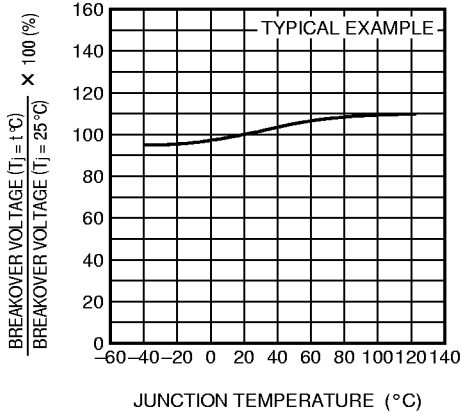
MEDIUM POWER USE
INSULATED TYPE, PLANAR PASSIVATION TYPE



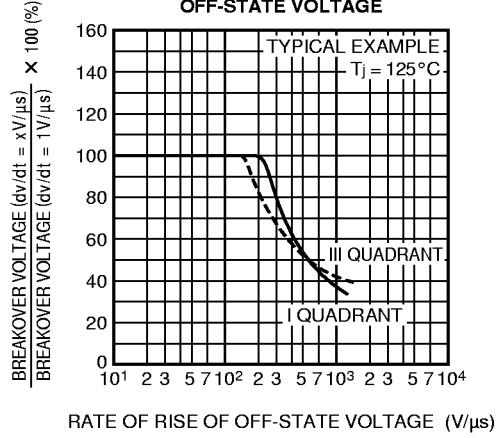
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MEDIUM POWER USE
INSULATED TYPE, PLANAR PASSIVATION TYPE

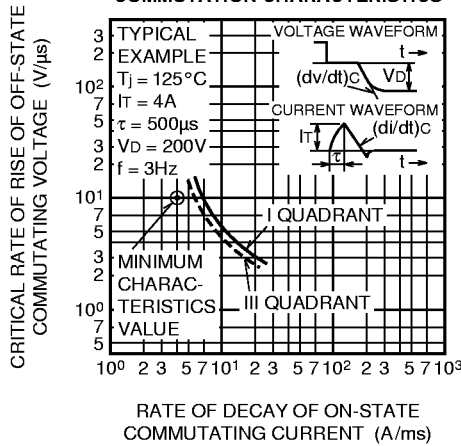
BREAKOVER VOLTAGE VS.
JUNCTION TEMPERATURE



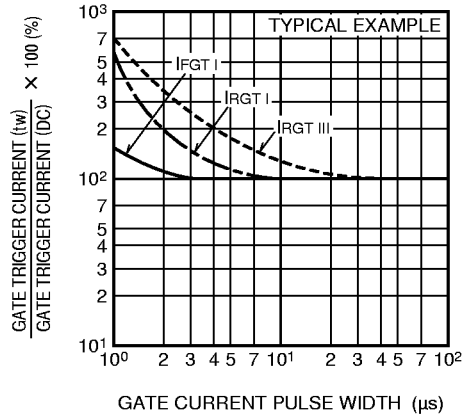
BREAKOVER VOLTAGE VS.
RATE OF RISE OF
OFF-STATE VOLTAGE



COMMUTATION CHARACTERISTICS



GATE TRIGGER CURRENT VS.
GATE CURRENT PULSE WIDTH



GATE TRIGGER CHARACTERISTICS TEST CIRCUITS

