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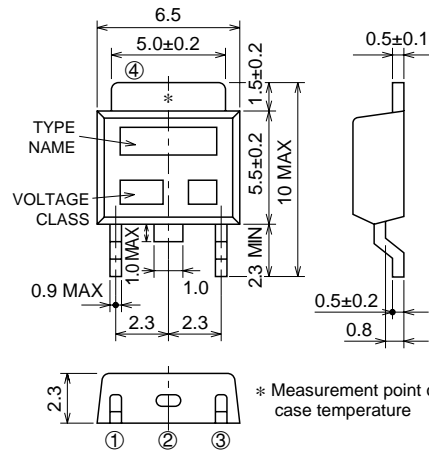
MEDIUM POWER USE
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

CR5AS



- **IT (AV)** **5A**
- **VDRM** **400V/600V**
- **IGT** **200 μ A**

OUTLINE DRAWING Dimensions in mm



* Measurement point of case temperature

① CATHODE
② ANODE
③ GATE
④ ANODE

MP-3

APPLICATION

Switching mode power supply, regulator for autcycle, such as TV. VCR. PRINTER, ignitors for autcycle, electric tools, other general purpose control applications, strobe flasher

MAXIMUM RATINGS

Symbol	Parameter	Voltage class		Unit
		8	12	
VRRM	Repetitive peak reverse voltage	400	600	V
VRSM	Non-repetitive peak reverse voltage	500	720	V
VR (DC)	DC reverse voltage	320	480	V
VDRM	Repetitive peak off-state voltage *1	400	600	V
VD (DC)	DC off-state voltage *1	320	480	V

Symbol	Parameter	Conditions	Ratings	Unit
IT (RMS)	RMS on-state current		7.8	A
IT (AV)	Average on-state current	Commercial frequency, sine half wave, 180° conduction, Tc=88°C	5	A
ITSM	Surge on-state current	60Hz sine half wave 1 full cycle, peak value, non-repetitive	90	A
I ² t	I ² t for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	33	A ² s
PGM	Peak gate power dissipation		0.5	W
PG (AV)	Average gate power dissipation		0.1	W
VFGM	Peak gate forward voltage		6	V
VRGM	Peak gate reverse voltage		6	V
IFGM	Peak gate forward current		0.3	A
Tj	Junction temperature		-40 ~ +125	°C
Tstg	Storage temperature		-40 ~ +125	°C
—	Weight	Typical value	0.26	g

*1. With Gate-to-cathode resistance R_{GK}=220 Ω

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IRRM	Repetitive peak reverse current	T _j =125°C, V _{RRM} applied, R _{GK} =220Ω	—	—	2.0	mA
IDRM	Repetitive peak off-state current	T _j =125°C, V _{DRM} applied, R _{GK} =220Ω	—	—	2.0	mA
V _{TM}	On-state voltage	T _c =25°C, I _{TM} =15A, instantaneous value	—	—	1.8	V
V _{GT}	Gate trigger voltage	T _j =25°C, V _D =6V, I _T =0.1A	—	—	0.8	V
V _{GD}	Gate non-trigger voltage	T _j =125°C, V _D =1/2V _{DRM} , R _{GK} =220Ω	0.1	—	—	V
I _{GT}	Gate trigger current	T _j =25°C, V _D =6V, I _T =0.1A	1	—	200* ³	μA
I _H	Holding current	T _j =25°C, V _D =12V, R _{GK} =220Ω	—	3.5	—	mA
R _{th(j-c)}	Thermal resistance	Junction to case * ²	—	—	3.0	°C/W

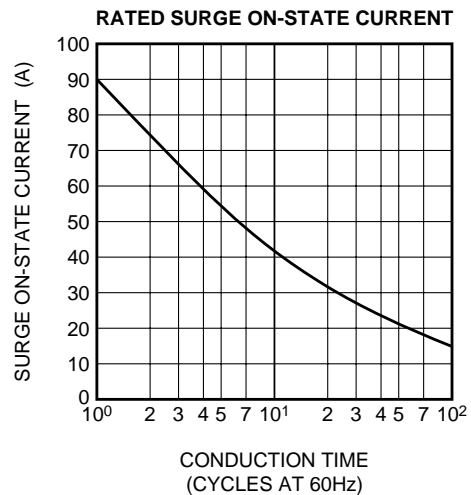
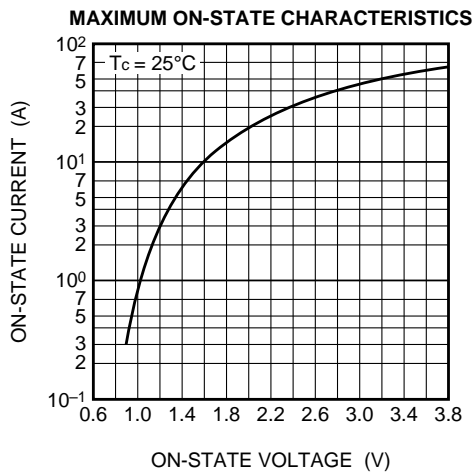
*2. The method point for case temperature is at anode tab.

*3. If special values of I_{GT} are required, choose at least two items from those listed in the table below. (Example: AB, BD)

Item	A	B	C	D
I _{GT} (μA)	1 ~ 30	20 ~ 50	40 ~ 100	80 ~ 200

The above values do not include the current flowing through the 220Ω resistance between the gate and cathode.

PERFORMANCE CURVES

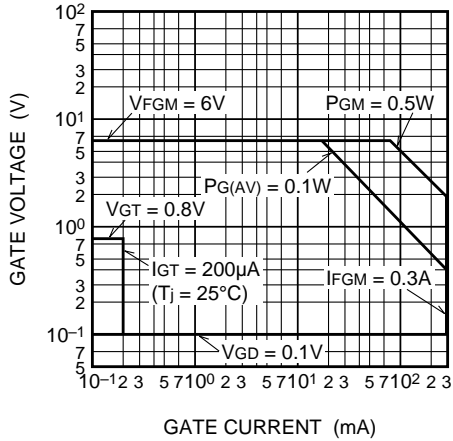


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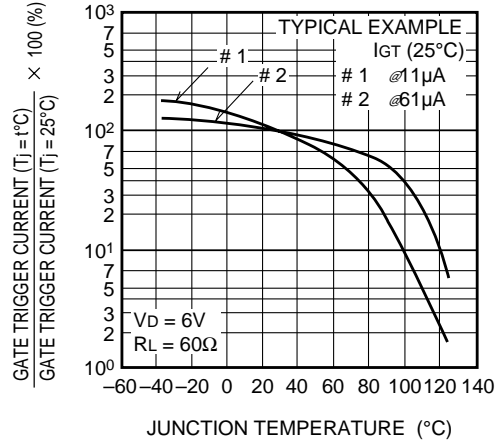
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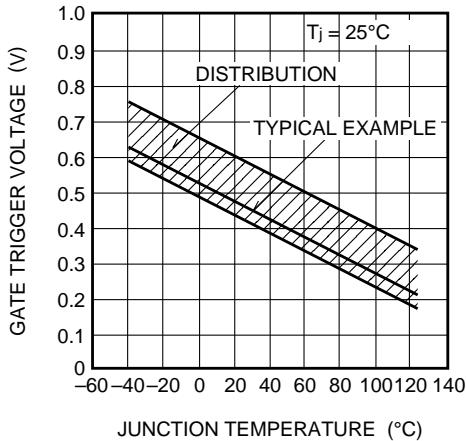
GATE CHARACTERISTICS



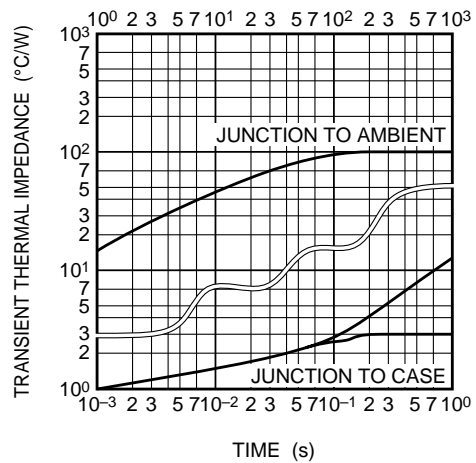
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE



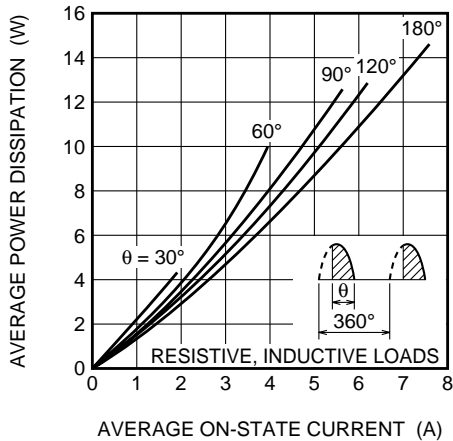
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE



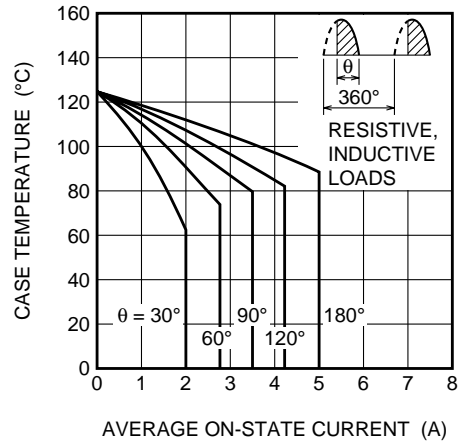
MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS



MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE HALF WAVE)



ALLOWABLE CASE TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)

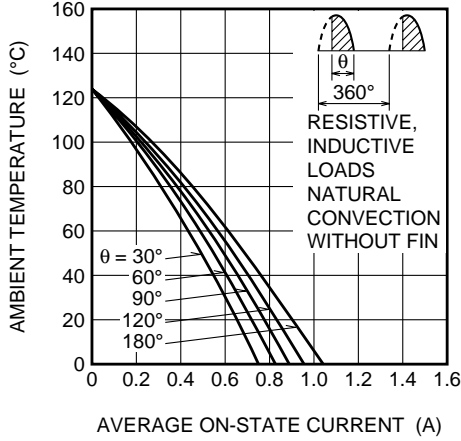


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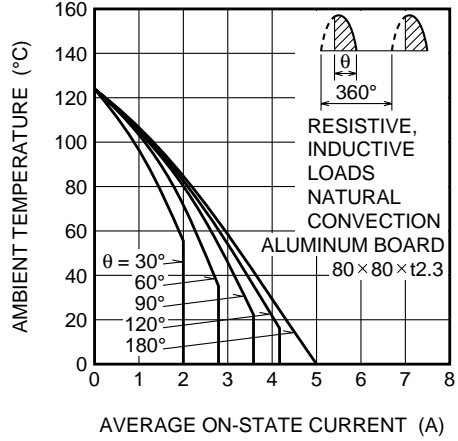
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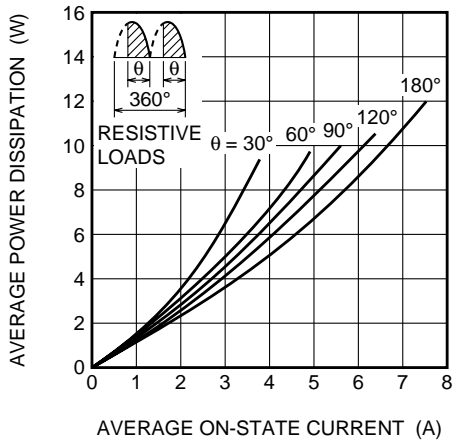
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)



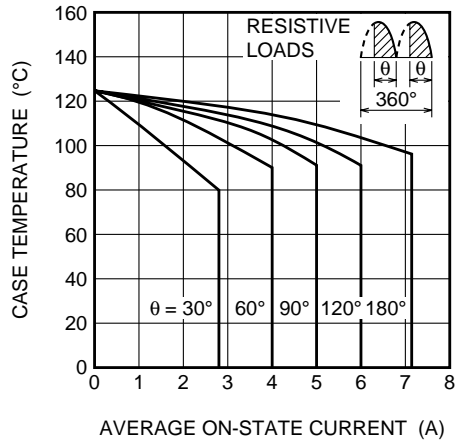
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)



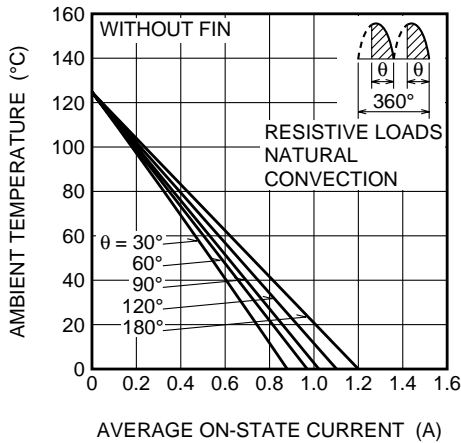
MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE FULL WAVE)



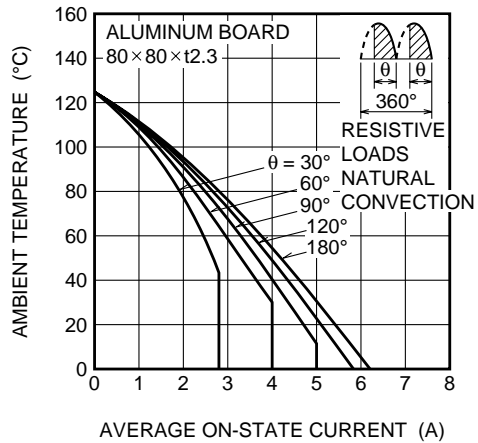
ALLOWABLE CASE TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVE)



ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVE)



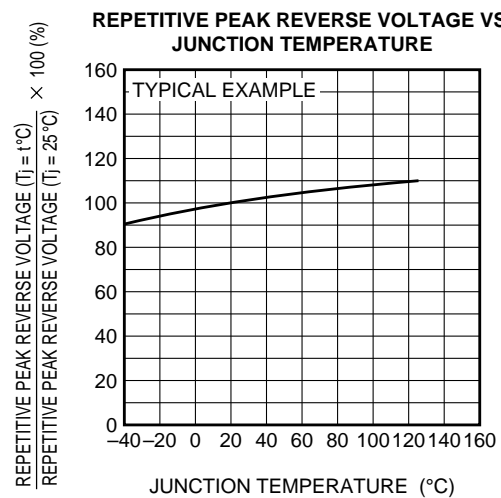
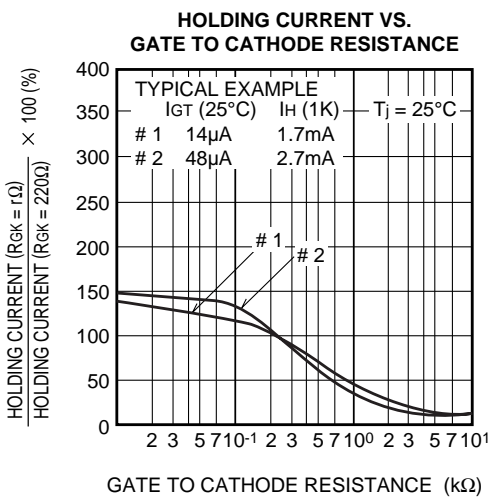
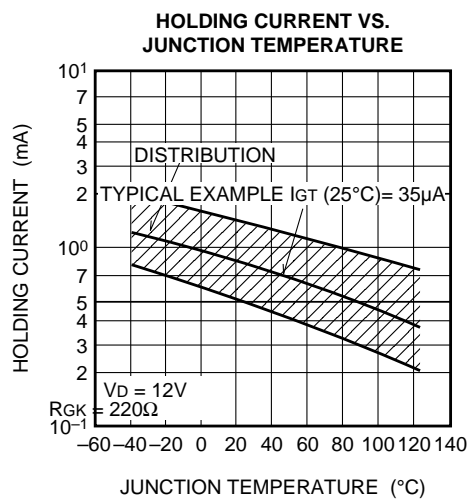
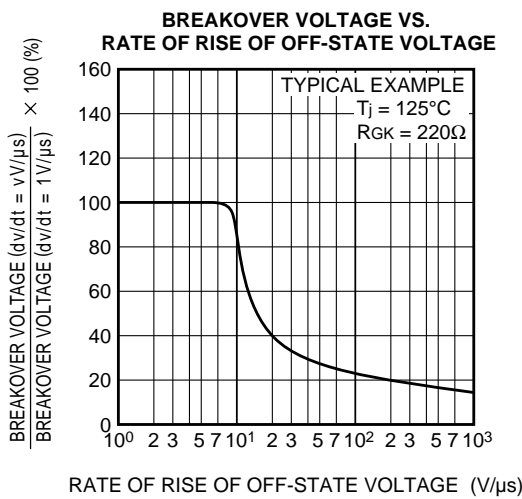
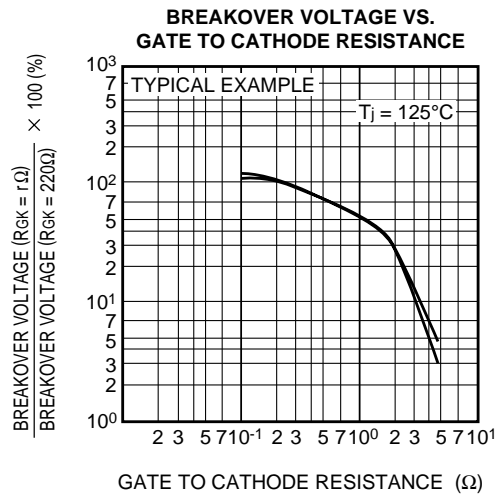
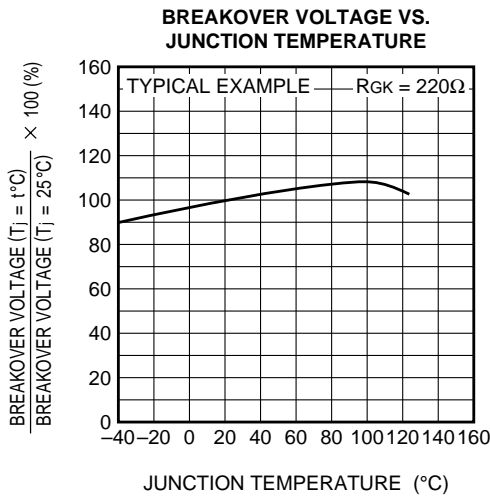
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVE)



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