

MCR265 SERIES

THYRISTORS

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

RATING		SYMBOL	VALUE	UNIT
Peak Reverse Blocking Voltage ⁽¹⁾	MCR265-2	V_{RRM}	50	Volts
	MCR265-4		200	
	MCR265-6		400	
	MCR265-8		600	
	MCR265-10		800	
Forward Current ($T_c=70^\circ\text{C}$) (All Conduction Angles)		$I_{T(RMS)}$	55	Amps
		$I_{T(AV)}$	35	
Peak Non-repetitive Surge Current – 8.3 ms (1/2 Cycle, Sine Wave)		I_{TSM}	550	Amps
Forward Peak Gate Power		P_{GM}	20	Watts
Forward Average Gate Power		$P_{G(AV)}$	0.5	Watt
Forward Peak Gate Current (300 μs , 120 PPS)		I_{GM}	2.0	Amps
Operating Junction Temperature Range		T_J	-40 to +125	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-40 to +150	$^\circ\text{C}$

1. V_{RRM} for all types can be applied on a continuous basis. Ratings apply for zero or negative voltage, however, positive gate voltage shall not be applied concurrent with negative potential on the anode. Blocking voltages shall not be tested with a constant current source such that the voltage ratings of the devices are exceeded.

These devices are rated for use in applications subject to high surge conditions. Care must be taken to ensure proper heat sinking when the device is to be used at high sustained currents.

THERMAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	MAX	UNIT
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.9	$^\circ\text{C/W}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	60	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS

CHARACTERISTIC		SYMBOL	MIN	TYP	MAX	UNIT
Peak Forward Blocking Voltage ($T_J = 125^\circ\text{C}$)	MCR265-2	V_{DRM}	50	-	-	Volts
	MCR265-4		200	-	-	
	MCR265-6		400	-	-	
	MCR265-8		600	-	-	
	MCR265-10		800	-	-	
Peak forward blocking current (rated V_{DRM} @ $T_J = 125^\circ\text{C}$)		I_{DRM}	-	-	2.0	mA
Peak reverse blocking current (rated V_{RRM} @ $T_J = 125^\circ\text{C}$)		I_{RRM}	-	-	2.0	mA
Forward "on" voltage ⁽¹⁾ ($I_{TM} = 110\text{A}$)		V_{TM}	-	1.5	1.9	Volts

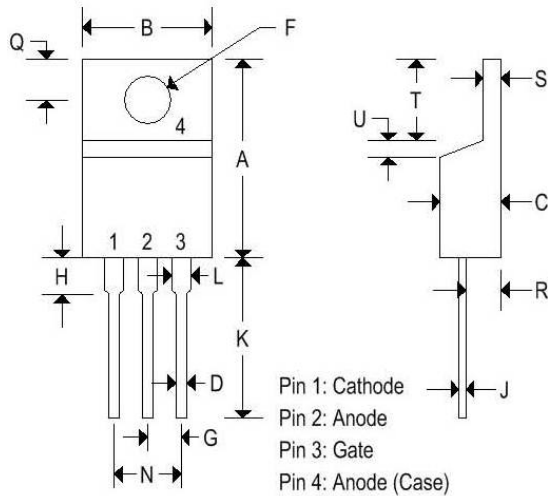
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Gate trigger current (continuous dc) (Anode voltage = 12Vdc, $R_L = 100\Omega$) ($T_C = -40^\circ\text{C}$)	I_{GT}	-	20	50	mA
		-	40	90	
Gate trigger voltage (continuous dc) (Anode voltage = 12Vdc, $R_L = 100\Omega$)	V_{GT}	-	1.0	1.5	Volts
Gate non-trigger voltage (Anode voltage = rated V_{DRM} , $R_L = 100\Omega$, $T_J = 125^\circ\text{C}$)	V_{GD}	0.2	-	-	Volts

MECHANICAL CHARACTERISTICS

Case:	TO-220AB
Marking:	Body painted, alpha-numeric
Pin out:	See below



	TO-220AB			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.575	0.620	14.600	15.750
B	0.380	0.405	9.650	10.290
C	0.160	0.190	4.060	4.820
D	0.025	0.035	0.640	0.890
F	0.142	0.147	3.610	3.730
G	0.095	0.105	2.410	2.670
H	0.110	0.155	2.790	3.930
J	0.014	0.022	0.360	0.560
K	0.500	0.562	12.700	14.270
L	0.045	0.055	1.140	1.390
N	0.190	0.210	4.830	5.330
Q	0.100	0.120	2.540	3.040
R	0.080	0.110	2.040	2.790
S	0.045	0.055	1.140	1.390
T	0.235	0.255	5.970	6.480
U	-	0.050	-	1.270
V	0.045	-	1.140	-
Z	-	0.080	-	2.030

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FIGURE 1 — AVERAGE CURRENT DERATING

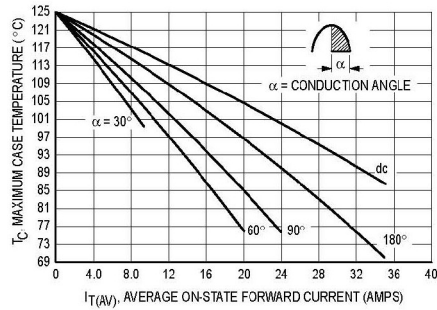


FIGURE 2 — MAXIMUM ON-STATE POWER DISSIPATION

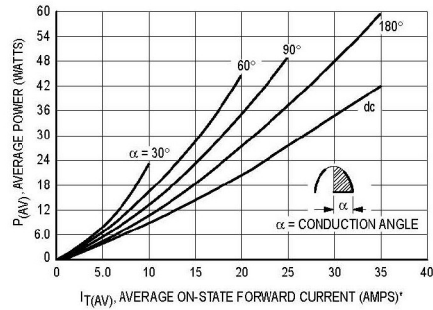


FIGURE 3 — GATE TRIGGER CURRENT

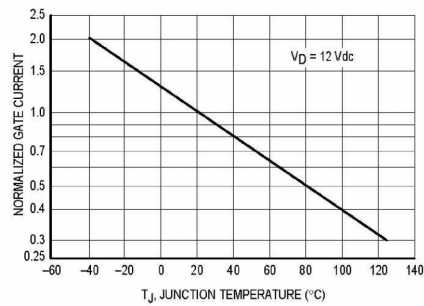


FIGURE 4 — GATE TRIGGER VOLTAGE

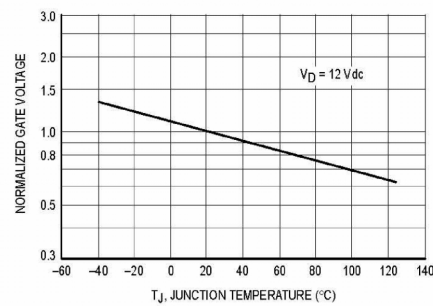


FIGURE 5 — HOLDING CURRENT

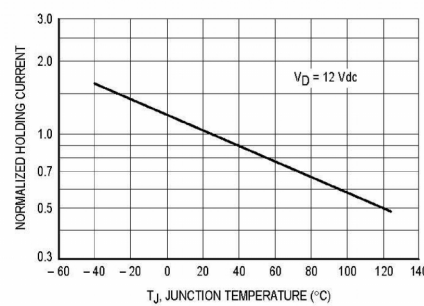


FIGURE 6 — TYPICAL ON-STATE CHARACTERISTICS

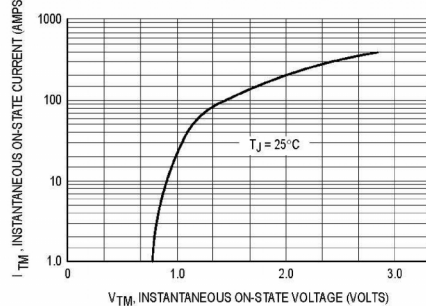


FIGURE 7 — THERMAL RESPONSE

