

DIGITRON SEMICONDUCTORS

MCR64 SERIES

SILICON CONTROLLED RECTIFIER

Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).

Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak repetitive forward and reverse blocking voltage⁽¹⁾ $(T_J = 25 \text{ to } +125^\circ\text{C, gate open})$ MCR64-1 MCR64-2 MCR64-3 MCR64-4 MCR64-5 MCR64-6 MCR64-7 MCR64-8 MCR64-9 MCR64-10	V_{RRM}, V_{DRM}	25 50 100 200 300 400 500 600 700 800	Volts
Non-repetitive peak reverse blocking voltage $(t \leq 5\text{ms})^{(1)}$ MCR64-1 MCR64-2 MCR64-3 MCR64-4 MCR64-5 MCR64-6 MCR64-7 MCR64-8 MCR64-9 MCR64-10	V_{RSM}	35 75 150 300 400 500 600 700 800 900	Volts
Forward current RMS	$I_{T(RMS)}$	55	Amps
Peak surge current (one cycle, 60Hz, $T_C = -40 \text{ to } +125^\circ\text{C}$)	I_{TSM}	550	Amps
Circuit fusing considerations $(t = 8.3\text{ms})$	I^2t	1255	A^2s
Peak gate power	P_{GM}	20	Watts
Average gate power (Pulse width $\leq 2\mu\text{s}$)	$P_{G(AV)}$	0.5	Watts
Peak forward gate current	I_{GM}	2	Amps
Forward peak gate voltage Reverse peak gate voltage	V_{GFM} V_{GRM}	10	Volts
Operating junction temperature range	T_J	-40 to +125	$^\circ\text{C}$
Storage temperature range	T_{stg}	-40 to +150	$^\circ\text{C}$
Mounting torque		30	In. lb.

Note 1: V_{DRM} and V_{RRM} for all types can be applied on a continuous basis without incurring damage. Ratings apply for zero or negative gate voltage. Devices shall not have a positive bias applied to the gate concurrently with a negative potential on the anode.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Maximum	Unit
Thermal resistance, junction to case Pressfit	$R_{\theta JC}$	1	$^\circ\text{C/W}$

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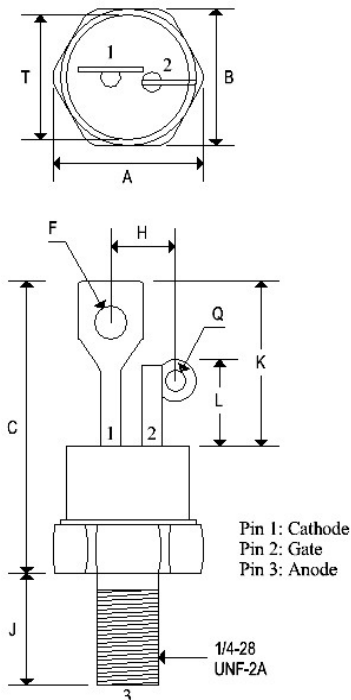
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ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Min.	Max.	Unit
Peak forward or reverse blocking current (V _{AK} = Rated V _{DRM} or V _{RRM} , gate open) T _C = 25°C T _C = 125°C	I _{DRM} , I _{RRM}	- -	10 2	μA mA
Forward "on" voltage (I _{TM} = 175A peak)	V _{TM}	-	2	Volts
Gate trigger current (continuous dc) (V _D = 12V, R _L = 50Ω) T _C = 25°C T _C = -40°C	I _{GT}	- -	40 75	mA
Gate trigger voltage (continuous dc) (V _D = 12V, R _L = 50Ω) T _C = 25°C T _C = -40°C (V _D = Rated V _{DRM} , R _L = 1000Ω, T _J = 125°C)	V _{GT}	- - 0.2	3 3.5 -	Volts
Holding current (V _D = 12V, R _L = 50Ω, gate open)	I _H	-	60	mA
Forward voltage application rate (V _D = rated V _{DRM} , T _J = 125°C)	dv/dt	50	-	V/μs

MECHANICAL CHARACTERISTICS

Case	TO-48
Marking	Body painted, alpha-numeric
Polarity	Cathode is stud



	TO-48			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.604	0.614	15.340	15.600
B	0.551	0.559	14.000	14.200
C	1.050	1.190	2.670	30.230
F	0.135	0.160	3.430	4.060
H	-	0.265	-	6.730
J	0.420	0.455	10.670	11.560
K	0.620	0.670	15.750	17.020
L	0.300	0.350	7.620	8.890
Q	0.055	0.085	1.400	2.160
T	0.501	0.505	12.730	12.830

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FIGURE 1 – AVERAGE CURRENT DERATING

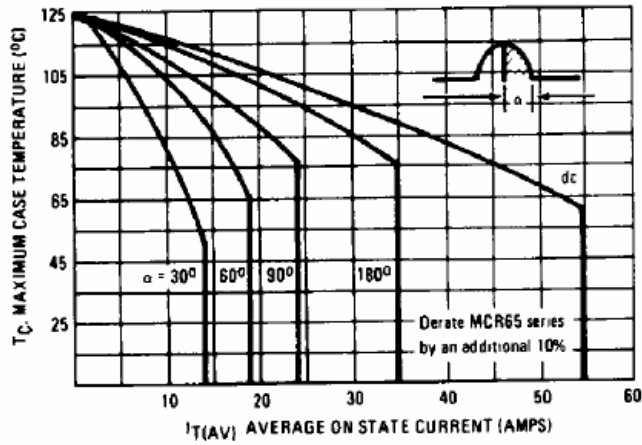


FIGURE 2 – POWER DISSIPATION

