DIGITRON SEMICONDUCTORS

2N6068, A, B-2N6075,A, B — SENSITIVE GATE TRIACS

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
Repetitive peak off-state voltage (1) (T_J = 110°C)			
2N6068, A, B		25	
2N6069, A, B		50	
2N6070, A, B		100	
2N6071, A, B	V_{DRM}	200	Volts
2N6072, A, B		300	
2N6073, A, B		400	
2N6074, A, B		500	
2N6075, A, B		600	
On-state current RMS (T_C = 85°C)	$I_{T(RMS)}$	4.0	Amp
Peak surge current (one full cycle, 60Hz, T_J = -40 to 110°C)	I_{TSM}	30	Amp
Circuit fusing considerations (T_J = -40 to 110°C, t = 1.0 to 8.3ms)	I^2t	3.6	A^2s
Peak gate power	P_{GM}	10	Watts
Average gate power	$P_{G(AV)}$	0.5	Watt
Peak gate voltage	V_{GM}	5.0	Volts
Operating junction temperature	T_J	-40 to 110	°C
Storage temperature	T_{stg}	-40 to 150	°C
Mounting torque (6-32) screw (2)	-	8.0	In. lb.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal resistance, junction to case	$R_{\Theta JC}$	3.5	°C/W
Thermal resistance, case to ambient	$R_{\Theta CA}$	60	°C/W

NOTE 1: Ratings apply for gate open conditions. Thyristor devices shall not be tested with a constant current source for blocking capability such that the voltage applied exceeds the rated blocking voltage.
NOTE 2: Torque rating applies with use of torque washer. Mounting torque in excess of 6 in. lb. does not appreciably lower case-to-sink thermal resistance. Main terminal 2 and heatsink contact pad are common.

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

Characteristic	Symbol	Min	Typ	Max	Unit
Peak blocking current (either direction) Rated V_{DRM} @ T_J = 110°C, gate open	I_{DRM}	-	-	2.0	mA
On-state voltage (either direction) I_{TM} = 6.0A peak	V_{TM}	-	-	2.0	Volts
Peak gate trigger voltage					
Main terminal voltage = 12Vdc, R_L = 100ohms, T_J = -40°C					
MT2(+), G(+):MT2(-), G(-) All types		-	1.4	2.5	
MT2(+), G(-): MT2(-), G(+) 2N6068A, B thru 2N6075A, B	V_{GTM}	-	1.4	2.5	Volts
Main terminal voltage = rated V_{DRM}, R_L = 10k ohms, T_J = 110°C					
MT2(+), G(+):MT2(-), G(-) All types		0.2	-	-	
MT2(+), G(-): MT2(-), G(+) 2N6068A, B thru 2N6075A, B		0.2	-	-	
Holding current (either direction)					
Main terminal voltage = 12Vdc, gate open, T_J = -40°C					
Initiating current = 1.0Adc					
2N6068 thru 2N6075	I_H	-	-	70	mA
2N6068A, B thru 2N6075A, B		-	-	30	
Initiating current = 1.0Adc, T_J = 25°C					
2N6068 thru 2N6075		-	-	30	
2N6068A, B thru 2N6075A, B		-	-	15	

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2N6068, A, B-2N6075,A, B — SENSITIVE GATE TRIACS

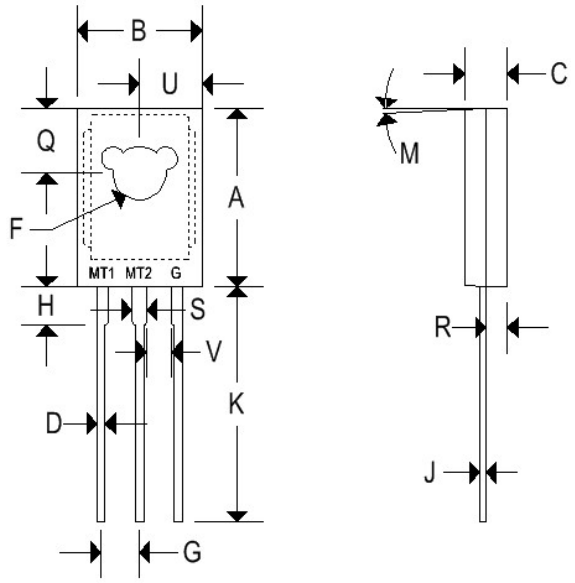
ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Turn-on time (either direction) I_{TM} = 14Adc, I_{GT} = 100mAdc)	t_{on}	-	1.5	-	µs
Blocking voltage application rate at commutation @ V_{DRM}, T_J = 85°C, gate open	dv/dt	-	5.0	-	V/µs

			Quadrant			
	Type	I_{GTM} @ T_J	I	II	III	IV
			mA	mA	mA	mA
Peak gate trigger current Main terminal voltage = 12Vdc, R_L = 100ohms Maximum value	2N6068-2N6075	25°C	30	-	30	-
		-40°C	60	-	60	-
	2N6068A-2N6075A	25°C	5.0	5.0	5.0	10
		-40°C	20	20	20	30
	2N6068B-2N6075B	25°C	3.0	3.0	3.0	5.0
		-40°C	15	15	15	20

MECHANICAL CHARACTERISTICS

Case	TO-126
Marking	Body painted, alpha-numeric
Pin out	See below



	TO-126			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.425	0.435	10.80	11.050
B	0.295	0.305	7.490	7.750
C	0.095	0.105	2.410	2.670
D	0.020	0.026	0.510	0.660
F	0.115	0.125	2.920	3.180
G	0.091	0.097	2.310	2.460
H	0.050	0.095	1.270	2.410
J	0.015	0.025	0.380	0.640
K	0.595	0.655	15.110	16.640
M	3° TYP		3° TYP	
Q	0.148	0.158	3.760	4.010
R	0.045	0.055	1.140	1.400
S	0.025	0.035	0.640	0.890
U	0.145	0.155	3.680	3.940
V	0.040	-	1.020	-

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FIGURE 1 – AVERAGE CURRENT DERATING

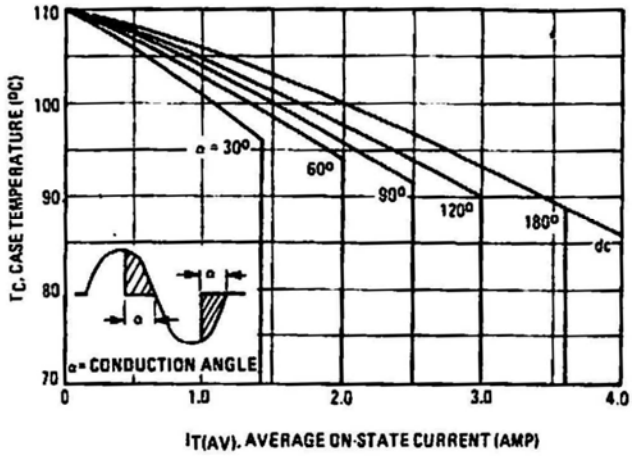

FIGURE 2 – RMS CURRENT DERATING

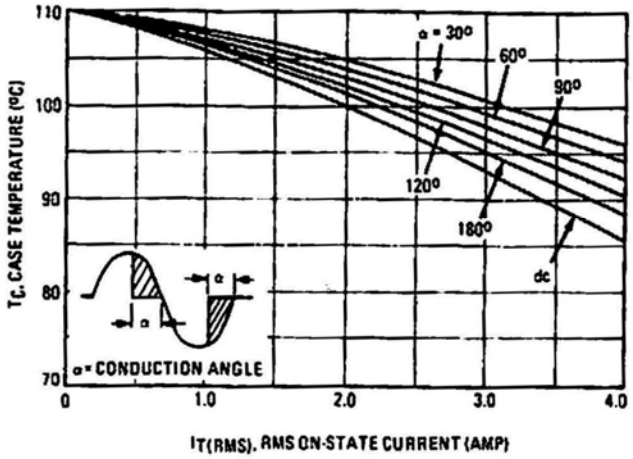

FIGURE 3 - POWER DISSIPATION

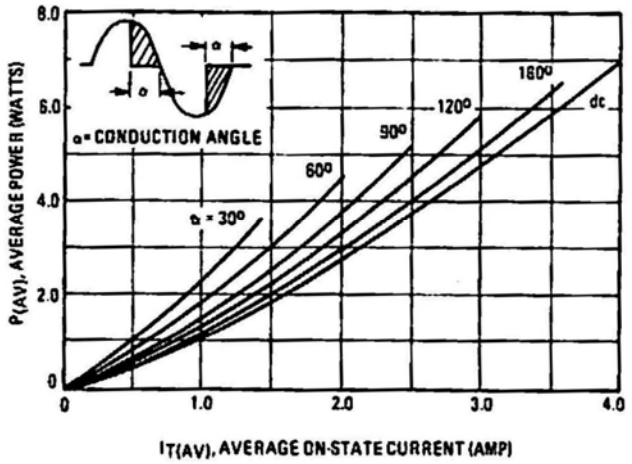

FIGURE 4 – POWER DISSIPATION

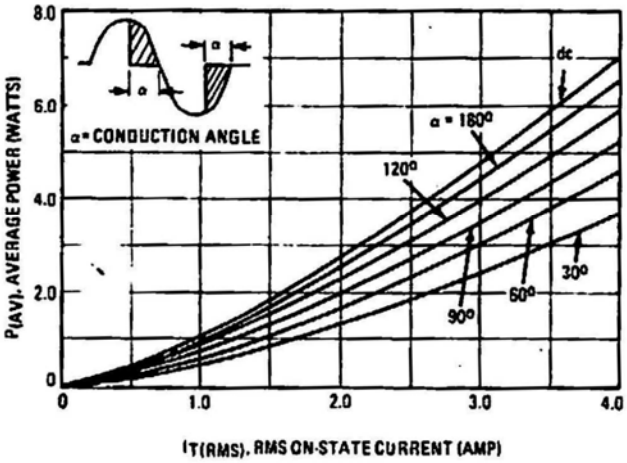

FIGURE 5 – TYPICAL GATE-TRIGGER VOLTAGE

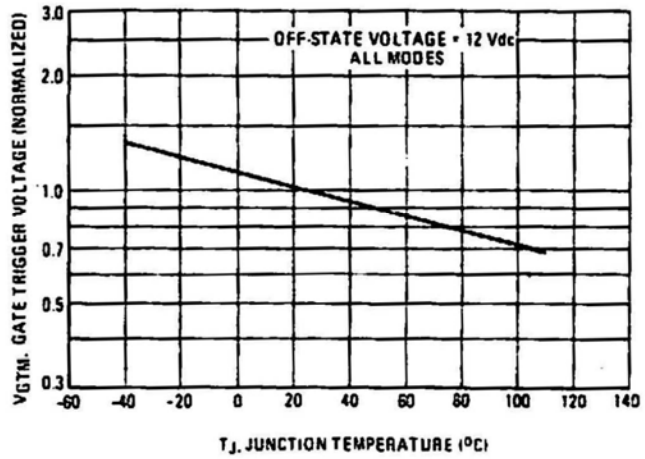

FIGURE 6 – TYPICAL GATE-TRIGGER CURRENT

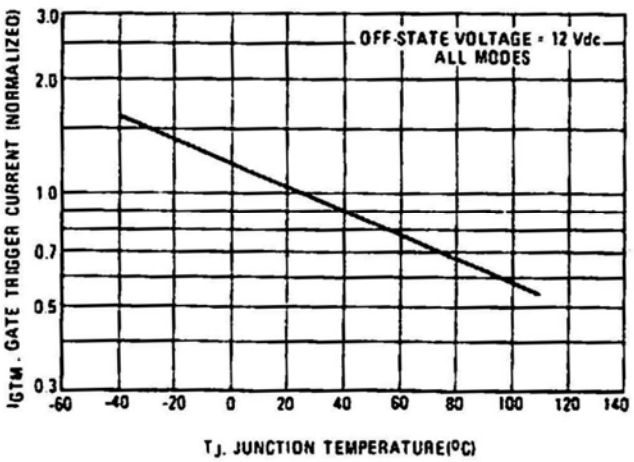

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FIGURE 7 – MAXIMUM ON-STATE CHARACTERISTICS

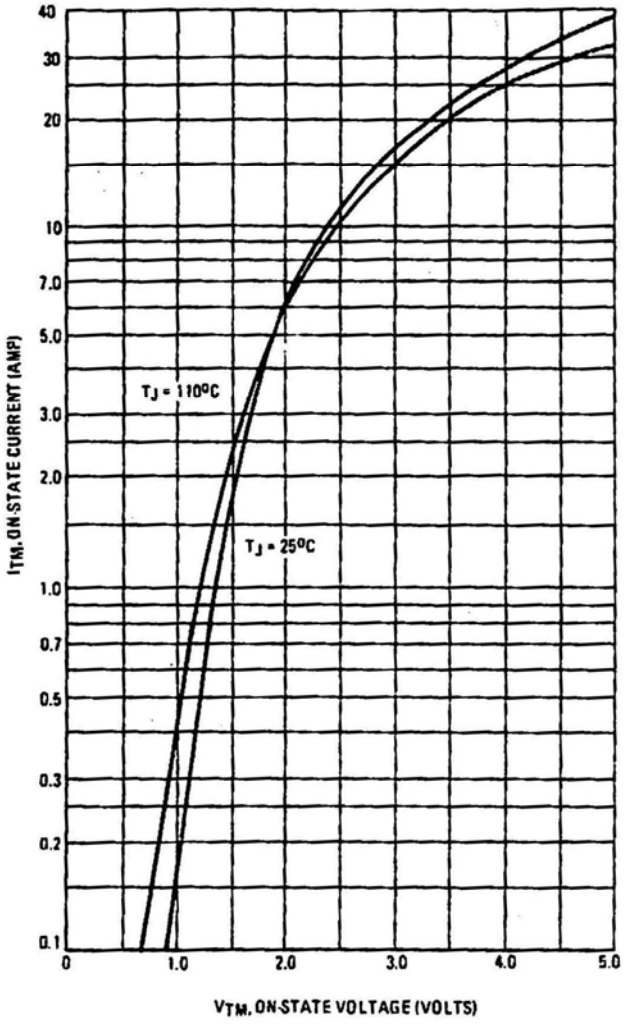


FIGURE 8 – TYPICAL HOLDING CURRENT

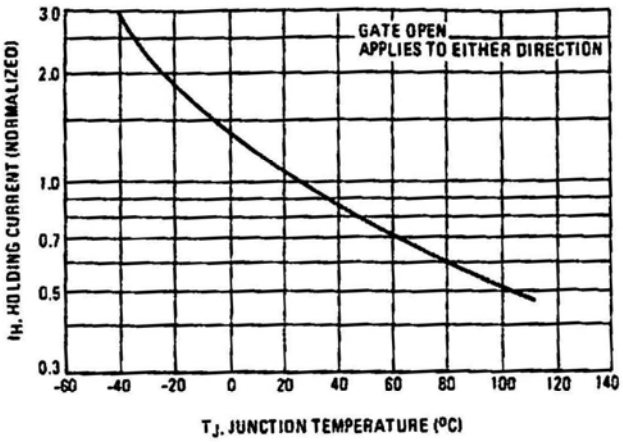


FIGURE 9 – MAXIMUM ALLOWABLE SURGE CURRENT

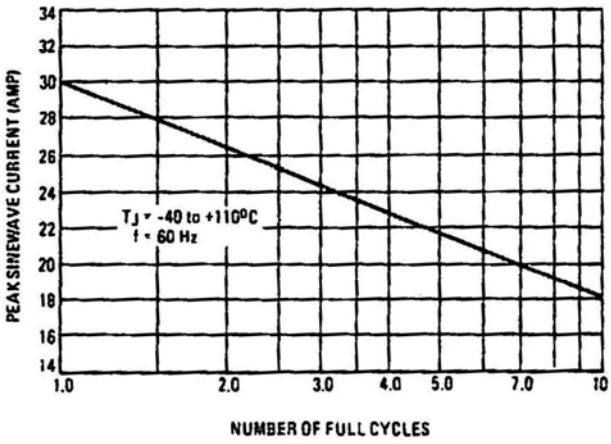
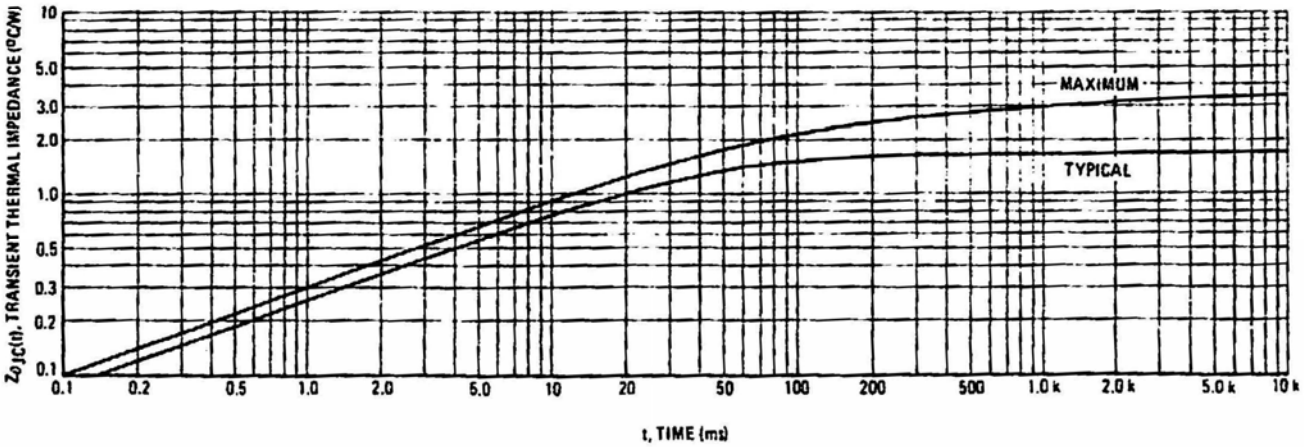


FIGURE 10 THERMAL RESPONSE



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