

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
Repetitive Peak Off-Stage Voltage, Gate Open 2N6151 2N6152 2N6153	V_{DRM}	200 400 600	Volts
RMS On-State Current ($T_C = 80^\circ\text{C}$)	$I_{T(RMS)}$	10	Amps
Peak Non-Repetitive Surge Current (One Cycle, 60Hz)	I_{TSM}	100	Amps
Circuit Fusing Considerations ($t = 8.3\text{ms}$)	I^2t	60	A^2s
Peak Gate Power ($T_J = 75^\circ\text{C}$, pulse width = $2.0\mu\text{s}$)	P_{GM}	20	Watts
Average Gate Power ($T_J = 75^\circ\text{C}$, $t = 8.3\text{ms}$)	$P_{G(AV)}$	0.5	Watts
Peak Gate Current (pulse width = $10\mu\text{s}$)	I_{GM}	2.0	Amps
Peak Gate Voltage	V_{GM}	10	Volts
Operating Junction Temperature Range	T_J	-40 to +100	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-40 to +150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Thermal Resistance, Junction To Case	$R_{\theta JC}$	2.0	$^\circ\text{C}/\text{W}$
Thermal Resistance, Case To Ambient	$R_{\theta CA}$	50	$^\circ\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ and either polarity of MT2 to MT1 voltage unless otherwise noted)

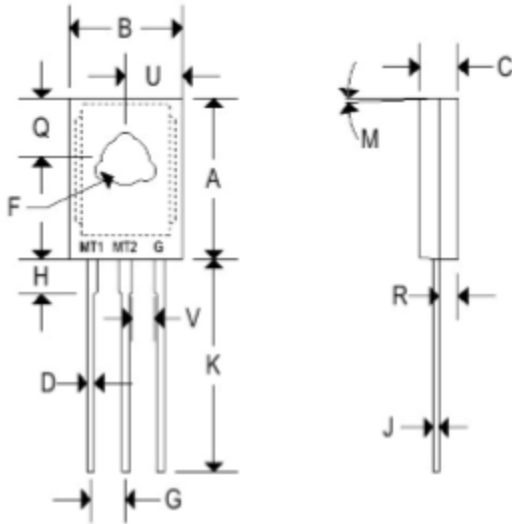
Characteristic	Symbol	Min	Typ	Max	Unit
Peak Off State Current ($V_D = V_{DRM}$, gate open) $T_C = 25^\circ\text{C}$ $T_C = 100^\circ\text{C}$	I_{DRM}	- -	- -	0.1 0.5	mA
Peak On-State Voltage ($I_{TM} = 14\text{A}$ peak, pulse width $\leq 1\text{ms}$, duty cycle $\leq 2\%$)	V_{TM}	-	-	1.65	Volts
Critical Rate Of Rise Of Off-State Voltage ($V_D = \text{Rated } V_{DRM}$, gate open, exponential waveform, $T_C = 100^\circ\text{C}$)	dv/dt	-	50	-	$\text{V}/\mu\text{s}$
Critical Rate Of Rise Of Commutating Voltage ($I_{T(RMS)} = \text{Rated } I_{T(RMS)}$, $V_D = \text{Rated } V_{DRM}$, commutating $di/dt = 5.4\text{A}/\text{ms}$, gate open, $T_C = 80^\circ\text{C}$)	$dv/dt(c)$	4	-	-	$\text{V}/\mu\text{s}$
DC Gate Trigger Current (continuous dc) ($V_D = 12\text{V}$, trigger mode) MT2(+), G(+); MT2(-), G(-); $R_L = 100\Omega$ MT2(+), G(-); $R_L = 50\Omega$ MT2(+), G(+); MT2(-), G(-); $R_L = 50\Omega$, $T_C = -40^\circ\text{C}$ MT2(+), G(-); $R_L = 25\Omega$, $T_C = -40^\circ\text{C}$	I_{GT}	- - - -	- - - -	50 50 80 80	mA

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ and either polarity of MT2 to MT1 voltage unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
DC Gate Trigger Voltage (continuous dc) ($V_D = 12\text{V}$, trigger mode) MT2(+), G(+); MT2(-), G(-); $R_L = 100\Omega$ MT2(+), G(-); $R_L = 50\Omega$ MT2(+), G(+); MT2(-), G(-); $R_L = 50\Omega$, $T_C = -40^\circ\text{C}$ MT2(+), G(-); $R_L = 25\Omega$, $T_C = -40^\circ\text{C}$ ($V_D = \text{Rated } V_{DRM}$, $R_L = 1000\Omega$, $T_C = 100^\circ\text{C}$) all polarities	V_{GT}				Volts
		-	-	2.5	
		-	-	2.5	
		-	-	3.5	
		-	-	3.5	
		0.2	-	-	
Holding Current ($V_D = 24\text{V}$, $I_T = 0.5\text{A}$, pulse width = 1ms, duty cycle $\leq 2\%$, gate trigger source 7V, 20 Ω) $T_C = 25^\circ\text{C}$ $T_C = -40^\circ\text{C}$	I_H				mA
		-	-	50	
		-	-	100	
Latching Current ($V_D = 24\text{V}$) Trigger source: 15V, 100 Ω , trigger mode) MT2(+), G(+); MT2(-), G(-) MT2(+), G(-) MT2(+), G(+); MT2(-), G(-), $T_C = -40^\circ\text{C}$ MT2(+), G(-), $T_C = -40^\circ\text{C}$	I_L				mA
		-	-	100	
		-	-	200	
		-	-	200	
		-	-	400	

MECHANICAL CHARACTERISTICS

Case	TO-127
Marking	Alpha-numeric
Pin out	See below



	TO-127			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.635	0.645	16.130	16.380
B	0.495	0.505	12.570	12.830
C	0.125	0.135	3.180	3.430
D	0.043	0.049	1.090	1.240
F	0.138	0.148	3.510	3.760
G	0.166 BSC		4.220 BSC	
H	0.105	0.115	2.670	2.920
J	0.032	0.034	0.813	0.864
K	0.595	0.645	15.110	16.380
M	9° TYP		9° TYP	
Q	0.185	0.195	4.700	4.950
R	0.075	0.085	1.910	2.160
U	0.245	0.255	6.220	6.480
V	0.080	-	2.030	-

