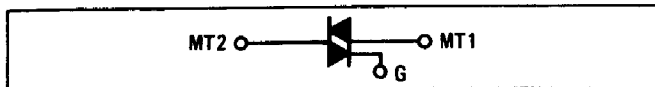


2N5806 – 2N5807

2N5809



SILICON BIDIRECTIONAL THYRISTORS

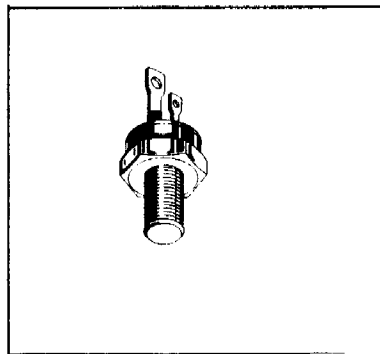
... designed primarily for industrial and military applications for the control of ac loads in applications such as light dimmers, power supplies, heating controls, motor controls, welding equipment and power switching systems; or wherever full-wave, silicon gate controlled solid-state devices are needed.

- Glass Passivated Junctions and Center Gate Fire
- Isolated Stud for Ease of Assembly
- Gate Triggering Guaranteed In All 4 Quadrants

**TRIACS
(THYRISTORS)
30 AMPERES RMS**

MAXIMUM RATINGS

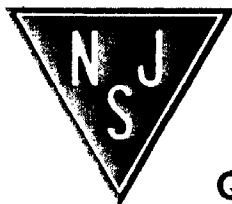
Rating	Symbol	Value	Unit
*Repetitive Peak Off-State Voltage (1) ($T_J = -65$ to $+125^\circ\text{C}$) 1/2 Sine Wave 50 to 60 Hz, Gate Open	V_{DRM}		Volts
*Peak Principal Voltage			
2N5806		200	
2N5807		400	
2N5809		600	
*Peak Gate Voltage	V_{GM}	10	Volts
*On-State Current RMS ($T_C = -65$ to $+85^\circ\text{C}$) ($T_C = +100^\circ\text{C}$) Full Sine Wave, 50 to 60 Hz	$I_T(\text{RMS})$	30 20	Amp
*Peak Surge Current (One Full Cycle of surge current at 60 Hz, preceded and followed by a 30 ARMS current, $T_J = +125^\circ\text{C}$)	I_{TSM}	250	Amp
Circuit Fusing Considerations ($T_J = -65$ to $+125^\circ\text{C}$, $t = 1.0$ to 8.3 ms)	I^2t	210	A^2s
*Peak Gate Power ($T_J = +80^\circ\text{C}$, Pulse Width = $2.0 \mu\text{s}$)	P_{GM}	20	Watts
*Average Gate Power ($T_J = +80^\circ\text{C}$, $t = 8.3$ ms)	$P_{G(AV)}$	0.5	Watt
*Peak Gate Current	I_{GM}	2.0	Amp
*Operating Junction Temperature Range	T_J	-65 to +125	$^\circ\text{C}$
*Storage Temperature Range	T_{stg}	-65 to +150	$^\circ\text{C}$
*Stud Torque 2N6160 thru 2N6165	-	30	in. lb.



THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
*Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.0	$^\circ\text{C/W}$

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.



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 = 125°C	I _{DRM}	-	-	2.0	mA
*On-State Voltage (Either Direction) I _{TM} = 42 A Peak, Pulse Width = 1.0 to 2.0 ms, Duty Cycle ≤ 2.0 %	V _{TM}	-	1.5	2.0	Volts
Gate Trigger Current, Continuous dc (1) Main Terminal Voltage = 12 Vdc, R _L = 50 Ohms MT2 (+), G(+) MT2 (+), G(-) MT2 (-), G(-) MT2 (-), G(+) *MT2 (+), G(+); MT2 (-), G(-) T _C = -65°C *MT2 (+), G(-); MT2 (-), G(+), T _C = -65°C	I _{GT}	-	10 13 15 20	60 70 70 100 200 250	mA
Gate Trigger Voltage, Continuous dc Main Terminal Voltage = 12 Vdc, R _L = 50 Ohms MT2 (+), G(+) MT2 (+), G(-) MT2 (-), G(-) MT2 (-), G(+) *All Quadrants, T _C = -65°C *Main Terminal Voltage = Rated V _{DRM} , R _L = 10 k ohms, T _J = +125°C	V _{GT}	-	0.7 0.7 0.8 0.9	2.0 2.1 2.1 2.5 3.4	Volts
Holding Current Main Terminal Voltage = 12 Vdc, Gate Open Initiating Current = 500 mA MT2 (+) MT2 (-) *Either Direction, T _C = -65°C	I _H	-	5.0 5.0	70 80 200	mA
*Turn-On Time Main Terminal Voltage = Rated V _{DRM} , I _{TM} = 42 A, Gate Source Voltage = 12 V, R _S = 50 Ohms, Rise Time = 0.1 μs, Pulse Width = 2.0 μs	t _{gt}	-	1.0	2.0	μs
Blocking Voltage Application Rate at Commutation, f = 60 Hz, T _C = 85°C On-State Conditions: I _{TM} = 42A, Pulse Width = 4.0 ms, di/dt = 17.5 A/ms Off State Conditions: Main Terminal Voltage = Rated V _{DRM} (200 μs min), Gate Source Voltage = 0 V, R _S = 50 Ω	dv/dt	-	5.0	-	V/μs

*Indicates JEDEC Registered Data.

(1) All voltage polarity reference to main terminal 1.