New Jersey Semi-Conductor Products, Inc.

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Silicon Controlled Rectifiers

Reverse Blocking Triode Thyristors

... designed primarily for half-wave ac control applications, such as motor controls, heating controls and power supplies.

- Glass Passivated Junctions with Center Gate Geometry for Greater Parameter
 Uniformity and Stability
- Small, Rugged, Thermowatt Construction for Low Thermal Resistance, High Heat Dissipation and Durability
- Blocking Voltage to 800 Volts







*MAXIMUM RATINGS (T_J = 25°C unless otherwise noted.)

Characteristic

Rating Symt		Value	Unit	
Peak Repetitive Forward and Reverse Blocking Voltage ⁽¹⁾ (Gate Open, T _J = -40 to 125°C) 2N6394 2N6395 2N6397 2N6398 2N6399	VDRM. VRRM	50 100 400 600 800	Volts	
RMS On-State Current (T _C = 90°C) (All Conduction Angles)	^J T(RMS)	12	Amps	
Peak Non-Repetitive Surge Current (1/2 Cycle, Sine Wave, 60 Hz, TJ = 125°C)	^I TSM	100	Amps	
Circuit Fusing (t = 8.3 ms)	1 ² t	40	A ² s	
Forward Peak Power	PGM	20	Watts	
Forward Average Gate Power	PG(AV)	0.5	Watt	
Forward Peak Gate Current	IGM	2	Amps	
Operating Junction Temperature Range	Тј	-40 to +125		
Storage Temperature Range	Tstg	-40 to +150	°C	
HERMAL CHARACTERISTICS				



*Indicates JEDEC Registered Data.

Thermal Resistance, Junction to Case

1. VDRM and VRRM for all types can be applied on a continuous basis. Ratings apply for zero or negative gate 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.

Symbol

R₀JC

Max

2

Unit

°C/W

Quality Semi-Conductors

2N6394 thru 2N6399

ELECTRICAL CHARACTERISTICS ($T_C = 25^{\circ}C$ unless otherwise noted.)

Characteristic	Symbol	Min	Тур	Max	Unit
*Peak Repetitive Forward or Reverse Blocking Current (V _{AK} = Rated V _{DRM} or V _{RRM} , Gate Open) T _J = 25°C T _J = 125°C	¹ DRM [,] RRM	-		10 2	μA mA
*Forward "On" Voltage (I _{TM} = 24 A Peak)	∨тм	-	1.7	2.2	Volts
*Gate Trigger Current (Continuous dc) (VD = 12 Vdc, RL = 100 Ohms)	lgt	-	5	30	mA
*Gate Trigger Voltage (Continuous dc) (V _D = 12 Vdc, R _L = 100 Ohms) (V _D = Rated V _{DRM} , R _L = 100 Ohms, T _J = 125°C)	V _{GT} V _{GD}	 0.2	0.7	1.5	Volts
*Holding Current (V _D = 12 Vdc, Gate Open)	Ч	_	6	40	mA
Turn-On Time (I _{TM} = 12 A, I _{GT} = 40 mAdc, V _D = Rated V _{DRM})	^t gt		1	2	μs
Turn-Off Time (V _D = Rated V _{DRM}) (I _{TM} = 12 A, I _R = 12 A) (I _{TM} = 12 A, I _R = 12 A, T _J = 125°C)	tq		15 35		μs
Critical Rate-of-Rise of Off-State Voltage Exponential (VD = Rated VDRM, TJ = 125°C)	dv/dt		50		V/µs

*Indicates JEDEC Registered Data.