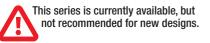
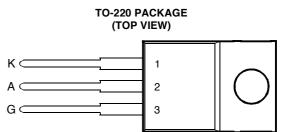
# BOURNS®

- 12 A Continuous On-State Current
- 100 A Surge-Current
- Glass Passivated Wafer
- 400 V to 800 V Off-State Voltage
- Max I<sub>GT</sub> of 20 mA





Pin 2 is in electrical contact with the mounting base.

#### absolute maximum ratings over operating case temperature (unless otherwise noted)

RATING			VALUE	UNIT	
	TIC126D		400		
Repetitive peak off-state voltage	TIC126M	V	600	v	
	TIC126S	V <sub>DRM</sub>	700		
	TIC126N		800		
	TIC126D		400	v	
Denetitive neek reverse veltere	TIC126M	N/	600		
Repetitive peak reverse voltage	TIC126S	V <sub>RRM</sub>	700		
	TIC126N		800		
Continuous on-state current at (or below) 70°C case temperature (see Note 1)			12	A	
Average on-state current (180° conduction angle) at (or below) 70°C case temperature		I <sub>T(RMS)</sub> I <sub>T(AV)</sub>	7.5	А	
(see Note 2)			7.5	A	
Surge on-state current at (or below) 25°C case temperature (see Note 3)			100	A	
Peak positive gate current (pulse width $\leq$ 300 $\mu$ s)			3	A	
Peak gate power dissipation (pulse width $\leq$ 300 $\mu$ s)			5	W	
Average gate power dissipation (see Note 4)		P <sub>G(AV)</sub>	1	W	
Operating case temperature range			-40 to +110	°C	
Storage temperature range			-40 to +125	°C	
Lead temperature 1.6 mm from case for 10 seconds			230	°C	

NOTES: 1. These values apply for continuous dc operation with resistive load. Above 70°C derate linearly to zero at 110°C.

 This value may be applied continuously under single phase 50 Hz half-sine-wave operation with resistive load. Above 70°C derate linearly to zero at 110°C.

3. This value applies for one 50 Hz half-sine-wave when the device is operating at (or below) the rated value of peak reverse voltage and on-state current. Surge may be repeated after the device has returned to original thermal equilibrium.

4. This value applies for a maximum averaging time of 20 ms.

### PRODUCT INFORMATION

## TIC126 SERIES SILICON CONTROLLED RECTIFIERS



#### electrical characteristics at 25°C case temperature (unless otherwise noted)

PARAMETER		TEST CONDITIONS		MIN	ТҮР	MAX	UNIT	
I <sub>DRM</sub>	Repetitive peak off-state current	$V_D = rated V_{DRM}$		T <sub>C</sub> = 110°C			2	mA
I <sub>RRM</sub>	Repetitive peak reverse current	$V_{R}$ = rated $V_{RRM}$	$I_{G} = 0$	T <sub>C</sub> = 110°C			2	mA
I <sub>GT</sub>	Gate trigger current	V <sub>AA</sub> = 12 V	$R_L = 100 \Omega$	t <sub>p(g)</sub> ≥ 20 μs		8	20	mA
V <sub>GT</sub>	Gate trigger voltage	V <sub>AA</sub> = 12 V t <sub>p(g)</sub> ≥ 20 μs	R <sub>L</sub> = 100 Ω	$T_{C} = -40^{\circ}C$			2.5	
		$V_{AA} = 12 V$ $t_{p(g)} \ge 20 \ \mu s$	R <sub>L</sub> = 100 Ω			0.8	1.5	V
		V <sub>AA</sub> = 12 V t <sub>p(g)</sub> ≥ 20 μs	R <sub>L</sub> = 100 Ω	T <sub>C</sub> = 110°C	0.2			
Ι <sub>Η</sub>	Holding current	$V_{AA} = 12 V$ Initiating I <sub>T</sub> = 100 mA		$T_{\rm C}$ = - 40°C			100	mA
		$V_{AA} = 12 V$ Initiating I <sub>T</sub> = 100 mA					40	
V <sub>T</sub>	On-state voltage	I <sub>T</sub> = 12 A	(see Note 5)				1.4	V
dv/dt	Critical rate of rise of off-state voltage	$V_D = rated V_D$	I <sub>G</sub> = 0	T <sub>C</sub> = 110°C		400		V/µs

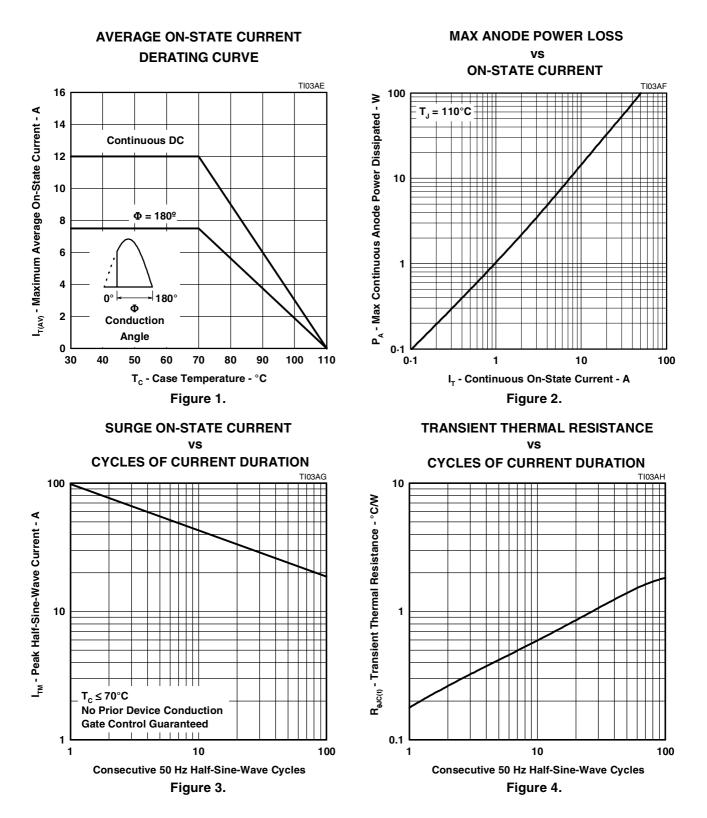
NOTE 5: This parameter must be measured using pulse techniques,  $t_p = 300 \ \mu$ s, duty cycle  $\le 2 \ \%$ . Voltage sensing-contacts, separate from the current carrying contacts, are located within 3.2 mm from the device body.

#### thermal characteristics

PARAMETER		MIN	ТҮР	MAX	UNIT
R <sub>θJC</sub>	Junction to case thermal resistance			2.4	°C/W
R <sub>θJA</sub>	Junction to free air thermal resistance			62.5	°C/W



#### THERMAL INFORMATION



### PRODUCT INFORMATION

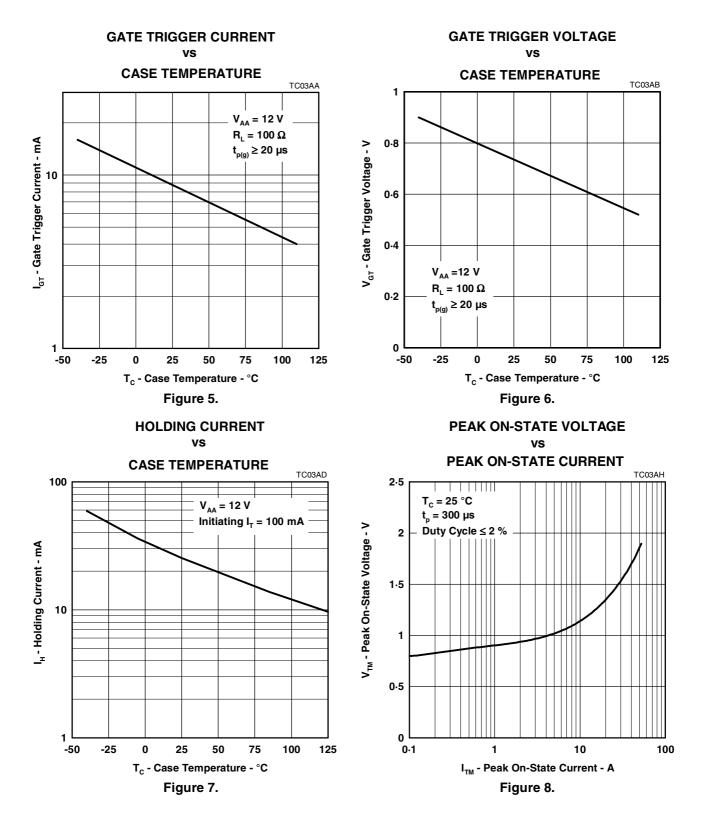
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# TIC126 SERIES SILICON CONTROLLED RECTIFIERS



#### **TYPICAL CHARACTERISTICS**



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