

TIC126A, TIC126B, TIC126C, TIC126D, TIC126E, TIC126M, TIC126N, TIC126S

P-N-P-N SILICON REVERSE-BLOCKING TRIODE THYRISTORS

- 12 A Continuous On-State Current
- 100 A Surge-Current
- Glass Passivated Wafer
- 100 V to 800 V Off-State Voltage
- Max I_{GT} of 20 mA
- Compliance to ROHS

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value							
		Α	В	С	D	E	М	S	N	
V _{DRM}	Repetitive peak off-state voltage (see Note1)	100	200	300	400	500	600	700	800	V
V_{RRM}	Repetitive peak reverse voltage	100	200	300	400	500	600	700	800	V
I _{T(RMS)}	Continuous on-state current at (or below) 70°C case temperature (see note2)	12						Α		
I _{T(AV)}	Average on-state current (180° conduction angle) at(or below) 70°C case temperature (see Note3)						А			
I _{TM}	Surge on-state current (see Note4)	100							Α	
I _{GM}	Peak positive gate current (pulse width ≤300 µs)			;	3				Α	
P _{GM}	Peak power dissipation (pulse width ≤300 µs) 5					W				
P _{G(AV)}	Average gate power dissipation (see Note5)				W					
T _C	Operating case temperature range	-40 to +110							°C	
T _{stg}	Storage temperature range		-40 to +125							°C
TL	Lead temperature 1.6 mm from case for 10 seconds	230							°C	

Notes:

- 1. These values apply when the gate-cathode resistance $R_{GK} = 1k\Omega$
- 2. These values apply for continuous dc operation with resistive load. Above 70°C derate linearly to zero at 110°C.
- 3. 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.
- 4. 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.
- 5. This value applies for a maximum averaging time of 20 ms.



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THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
t _{gt}	Gate-controlled Turn-on time	$V_{AA} = 30 \text{ V}, R_L = 6 \Omega,$ $R_{GK(eff)} = 100 \Omega, V_{in} = 20 \text{ V}$	0.8	116
tq	Circuit-communicated Turn-off time	V_{AA} = 30 V, R_L = 6 Ω , I_{RM} \approx 10 A	11	μs
R _{∂JC}			≤ 2.4	°C/W
R∂JA			≤ 62.5	C/VV

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Тур	Mx	Unit
I _{DRM}	Repetitive peak off-state current	V_D = Rated V_{DRM} , R_{GK} = 1 kΩ, T_C = 110°C	-	-	2	mA
I _{RRM}	Repetitive peak reverse current	V_R = Rated V_{RRM} , I_G = 0, T_C = 110°C	-	-	2	mA
I _{GT}	Gate trigger current	V_{AA} = 6 V, R _L = 100 Ω, $t_{p(g)} \ge 20 \mu s$	-	5	20	mA
V _{GT}	Gate trigger voltage	$V_{AA} = 6 \text{ V}, R_L = 100 \Omega,$ $R_{GK} = 1 \text{ k}\Omega, t_{p(g)} \ge 20 \mu \text{s},$ $T_C = -40^{\circ}\text{C}$	-	-	2.5	V
		V_{AA} = 6 V, R _L = 100 Ω, R _{GK} = 1 kΩ, t _{p(g)} ≥ 20μs,	-	0.8	1.5	
		V_{AA} = 6 V, R_L = 100 Ω, R_{GK} = 1 kΩ, $t_{p(g)}$ ≥ 20μs, T_C = 110°C	0.2	-	ı	
I _H	Holding current	V_{AA} = 6 V, R_{GK} = 1 k Ω , initiating I_T = 100 mA	-	- 40		
		$V_{AA} = 6 \text{ V}, R_{GK} = 1 \text{ k}\Omega,$ initiating $I_T = 100 \text{ mA},$ $T_C = -40^{\circ}\text{C}$	_	_	70	mA
V_{TM}	Peak on-state voltage	I _{TM} = 8A (see Note6)	-	-	1.4	V
dv/dt	Critical rate of rise of off-state voltage	V_D = Rated V_D , T_C = 110°C	-	100	-	V/µs

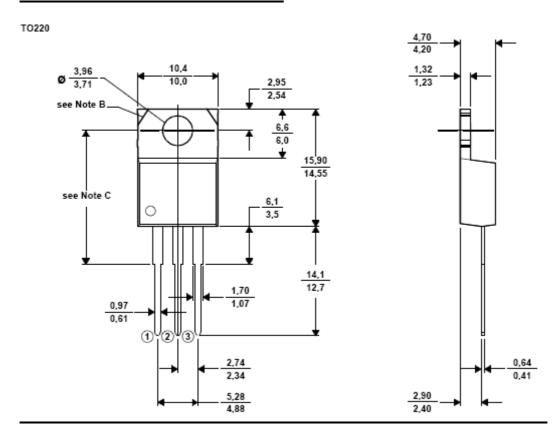
Note 6:

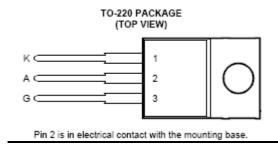
This parameters must be measured using pulse techniques, $t_W = 300\mu s$, duty cycle ≤ 2 %, voltage-sensing contacts, separate from the courrent-carrying contacts, are located within 3.2mm (1/8 inch) from de device body.



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MECHANICAL DATA CASE TO-220





Pin 1 :	kathode
Pin 2 :	Anode
Pin 3 :	Gate