

TIC106A, TIC106B, TIC106C, TIC106D, TIC106E, TIC106M, TIC106N, TIC106S

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

- 5 A Continuous On-State Current
- 30 A Surge-Current
- Glass Passivated Wafer
- 100 V to 800 V Off-State Voltage
- Max I_{GT} of 200 μ A
- Compliance to ROHS

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings	Value								Unit
		Α	В	С	D	Е	М	S	Ν	Unit
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) 80°C case temperature (see note2)	5					1	A		
I _{T(AV)}	Average on-state current (180° conduction angle) at(or below) 80°C case temperature (see Note3)	3.2					A			
I _{TM}	Surge on-state current (see Note4)	30					Α			
I _{GM}	Peak positive gate current (pulse width ≤300 µs)	0.2					А			
P _{GM}	Peak power dissipation (pulse width ≤300 µs)	1.3					W			
P _{G(AV)}	Average gate power dissipation (see Note5)	0.3					W			
Tc	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				



TIC106A, TIC106B, TIC106C, TIC106D, TIC106E, TIC106M, TIC106N, TIC106S

THERMAL CHARACTERISTICS

Symbol	Ratings		Value	Unit
t _{gt}	Gate-controlled Turn-on time	$V_{AA} = 30 \text{ V}, \text{R}_{\text{L}} = 6 \Omega$ $R_{\text{GK}(\text{eff})} = 5 \text{k}\Omega$ $V_{\text{in}} = 50 \text{ V}$	1.75	μs
t _q	Circuit-communicated Turn-off time	V_{AA} = 30 V, R_L = 6 Ω $I_{RM} \approx 8 A$	7.7	
R∂JC	Junction to case thermal resistance		≤ 3.5	°C/W
R∂JA	Junction to free air thermal resistan	≤ 62.5	0/00	

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Тур	Мах	Unit
I _{DRM}	Repetitive peak off-state current	V_D = Rated V_{DRM} R _{GK} = 1 k Ω , T _C = 110°C	-	-	400	μA
I _{RRM}	Repetitive peak reverse current	V_R = Rated V_{RRM} , I_G = 0 T_C = 110°C	-	-	1	mA
I _{GT}	Gate trigger current	V _{AA} = 6 V, R _L = 100 Ω t _{p(g)} ≥ 20μs	-	60	200	μA
		$V_{AA} = 6 V, R_L = 100 \Omega$ $R_{GK} = 1 k\Omega, t_{p(g)} \ge 20 \mu s$ $T_C = -40^{\circ}C$	-	-	1.2	
V _{GT}	Gate trigger voltage	V _{AA} = 6 V, R _L = 100 Ω R _{GK} = 1 kΩ, t _{p(g)} ≥ 20μs	0.4	0.6	1	V
		$V_{AA} = 6 V, R_L = 100 \Omega$ $R_{GK} = 1 k\Omega, t_{p(g)} \ge 20 \mu s$ $T_C = 110^{\circ}C$	0.2	-	-	
	Holding ourrent	$V_{AA} = 6 \text{ V}, \text{ R}_{GK} = 1 \text{ k}\Omega$ initiating I _T = 10 mA	-	-	5	
I _H	Holding current	V_{AA} = 6 V, R_{GK} = 1 k Ω initiating I _T = 10 mA T _C = -40°C	-	- 8	8	mA
V _{TM}	Peak on-state voltage	I _{TM} = 5A (see Note6)	-	-	1.7	V
dv/dt	Critical rate of rise of off-state voltage	V_D = Rated V_D R _{GK} = 1 k Ω , T _C = 110°C	-	10	-	V/µs

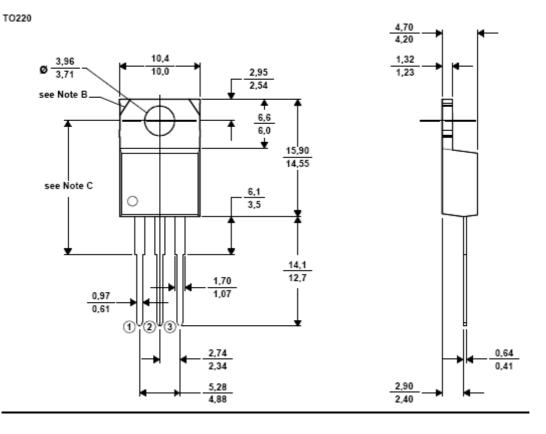


TIC106A, TIC106B, TIC106C, TIC106D, TIC106E, TIC106M, **TIC106N, TIC106S**

Notes:

- 1. These values apply when the gate-cathode resistance R_{GK} = 1k Ω
- 2. These values apply for continuous dc operation with resistive load. Above 80°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 80°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.
- This value applies for a maximum averaging time of 20 ms.
 This parameters must be measured using pulse techniques, t_w = 300µs, duty cycle ≤ 2 %, voltagesensing contacts, separate from the courrent-carrying contacts, are located within 3.2mm (1/8 inch) from de device body.

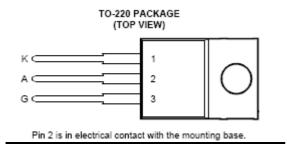
MECHANICAL DATA CASE TO-220





TIC106A, TIC106B, TIC106C, TIC106D, TIC106E, TIC106M, TIC106N, TIC106S

PINNING



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

Revised September 2012

Information furnished is believed to be accurate and reliable. However, Comset Semiconductors assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may results from its use. Data are subject to change without notice. Comset Semiconductors makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Comset Semiconductors assume any liability arising out of the application or use of any product and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Comset Semiconductors' products are not authorized for use as critical components in life support devices or systems.

www.comsetsemi.com

info@comsetsemi.com