THYRISTOR

Fully-diffused thyristor in TO–92 package, with low gate current requirement suitable for driving from IC outputs. Applications include relay and coil pulsing, control of small DC motors, small lamps, etc.

QUICK REFERENCE DATA

Repetitive peak voltages	V_{DRM}/V_{RRM}	max.	200	V
Average on-state current	$I_{T(AV)}$	max.	0.5	A
RMS on-state current	$I_{T(RMS)}$	max.	0.8	A
Non-repetitive peak on-state current	I_{TSM}	max.	10	A

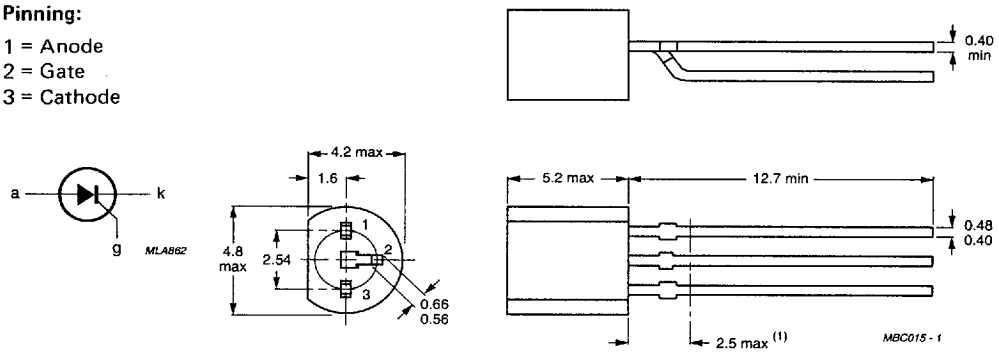
MECHANICAL DATA

Dimensions in mm

Fig.1 TO-92 variant.

Pinning:

1 = Anode
2 = Gate
3 = Cathode



(1) Terminal dimensions within this zone are uncontrolled to allow for flow of plastic and terminal irregularities.

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134).

Anode to cathode				
Non-repetitive peak voltages ($t \leqslant 10$ ms)	V_{DSM}/V_{RSM}	max.	200	V
Repetitive peak voltages ($\delta \leqslant 0.01$); $R_{GK} = 1\ k\Omega$	V_{DRM}/V_{RRM}	max.	200	V
Crest-working off-state voltage	V_{DWM}/V_{RWM}	max.	200	V
Average on-state current (averaged over any 20 ms period up to $T_c = 67\ ^oC$	$I_{T(AV)}$	max.	0.51	A
$T_c = 102\ ^oC$	$I_{T(AV)}$	max.	0.255	A
RMS on-state current	$I_{T(RMS)}$	max.	0.8	A
Repetitive peak on-state current	I_{TRM}	max.	8	A
Non-repetitive peak on-state current; $t = 8.3$ ms; half sinewave; $T = 25\ ^oC$	I_{TSM}	max.	10	A
I^2t for fusing ($t = 8.3$ ms)	I^2t	max.	0.4	A^2s
Gate to cathode				
Peak reverse voltage	V_{RGM}	max.	5	V
Average power dissipation $T_{amb} = 25\ ^oC$	$P_{G(AV)}$	max.	0.01	W
Peak power dissipation $T_{amb} = 25\ ^oC$	P_{GM}	max.	0.1	W
Temperatures				
Storage temperature	T_{stg}		−65 to +150	^oC
Operating junction temperature	T_j	max.	−65 to +125	^oC

THERMAL RESISTANCE

From junction to ambient in free air	$R_{th\ j\text{-}a}$	=	150	K/W*
From junction to case	$R_{th\ j\text{-}c}$	=	75	K/W**

*Device mounted on printed circuit board, max. lead length 4 mm.

**This measurement is made with the case mounted "flat side down" on a heatsink and held in position by means of a metal clamp over the curved surface.

CHARACTERISTICS

Anode to cathode

Rate of rise of off-state voltage that will not trigger any device; exponential method; V_D = 2/3 $V_{DRM\ max}$; R_{GK} = 1 kΩ; T_j = 125 °C	dV_D/dt	typ.	25	V/μs
Peak off-state/reverse current				
V_D = 200 V; R_{GK} = 1 kΩ; T_j = 25 °C	I_{DRM}/I_{RRM}	<	10	μA
T_j = 125 °C	I_{DRM}/I_{RRM}	<	50	μA
On-state voltage				
I_{TM} = 1.2 A peak; T_j = 25 °C; t_p = 300 μs; δ ≤ 0.01	V_{TM}	<	1.7	V
Latching current				
V_D = 12 V; R_{GK} = 1 kΩ; T_j = 25 °C	I_L	<	6	mA
Holding current				
V_D = 12 V; R_{GK} = 1 kΩ; T_j = 25 °C	I_H	<	5	mA

Gate to cathode

Voltage that will trigger all devices (continuous DC)				
V_D = 12 V; R_L = 100 Ω; T_j = 25 °C	V_{GT}	>	0.8	V
T_j = −65 °C	V_{GT}	>	1.2	V
Voltage that will not trigger any devices				
V_D = 200 V; T_j = 125 °C	V_{GD}	<	0.1	V
Current that will trigger all devices				
V_D = 200 V; R_L = 100 Ω; T_j = 25 °C	I_{GT}	>	200	μA
T_j = −65 °C	I_{GT}	>	350	μA