THYRISTORS

Fully-diffused thyristors 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

		BT169–	B	D	E	G	
Repetitive peak voltages	V_{DRM}/V_{RRM}	max.	200	400	500	600	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.		8			A

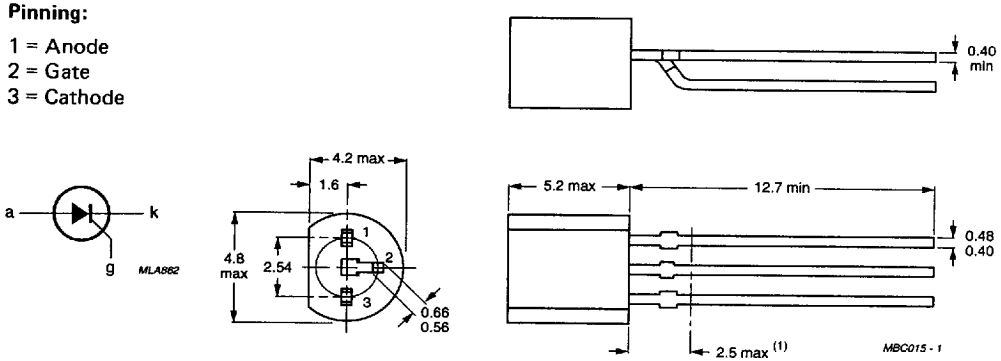
MECHANICAL DATA

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.

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RATINGS

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

Anode to cathode			BT169–	B	D	E	G	
Non-repetitive peak voltages ($t \leqslant 10$ ms)	V_{DSM}/V_{RSM}	max.		200	400	500	600	V
Repetitive peak voltages ($\delta \leqslant 0.01$)	V_{DRM}/V_{RRM}	max.		200	400	500	600	V
Crest-working off-state voltage	V_{DWM}/V_{RWM}	max.		200	400	400	400	V
Average on-state current (averaged over any 20 ms period up to $T_c = 55$ °C	$I_{T(AV)}$	max.			0.5			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; $t = 10$ ms; half sinewave; $T_j = 125$ °C prior to surge; with reapplied V_{RWMmax}	I_{TSM}	max.			8			A
I^2t for fusing ($t = 10$ ms)	I^2t	max.			0.32			A^2s
Gate to cathode								
Peak reverse voltage	V_{RGM}	max.			5			V
Average power dissipation (averaged over any 20 ms period)	$P_{G(AV)}$	max.			0.1			W
Peak power dissipation	P_{GM}	max.			2			W
Temperatures								
Storage temperature	T_{stg}				−40 to +150			°C
Operating junction temperature	T_j	max.			125			°C

THERMAL RESISTANCE

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

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

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CHARACTERISTICS

Anode to cathode

On-state voltage				
I_T = 1 A; T_j = 25 °C	V_T	<	1.35	V*
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/dt	typ.	25	V/μs
Reverse current				
V_R = V_{RRMmax}; R_{GK} = 1 kΩ; T_j = 125 °C	I_R	<	0.1	mA
Off-state current				
V_D = V_{DRMmax}; R_{GK} = 1 kΩ; T_j = 125 °C	I_D	<	0.1	mA
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				
V_D = 12 V; T_j = 25 °C	V_{GT}	>	0.8	V
Current that will trigger all devices				
V_D = 12 V; T_j = 25 °C	I_{GT}	>	0.2	mA

*Measured under pulse conditions to avoid excessive dissipation.

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