COMSET SEMICONDUCTORS

BTX18-100/BTX18-200/BTX18-300
BTX18-400/BTX18-500

SILICON THYRISTORS

The BTX18 series is a range of p-gate reverse blocking thyristors, in a TO-39 metal enveloppe, intended for use in general low power applications up to a A average on-state current.

RATINGS

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

Anode to Cathode - Ratings

Voltage [1])

Symbol	Ratings	BTX18-100	BTX18-200	BTX18-300	BTX18-400	BTX18-500	
V_R	Continuous Reverse Voltage	100	200	300	400	500	V
V_{RWM}	Crest Working Reverse Voltage	100	200	300	400	500	V
V_{RRM}	Repetitive Peak Reverse Voltage (δ = 0.01 ; f=50Hz)	120	240	350	500	600	V
V_{RSM}	Non-repetitive peak reverse voltage (t<10ms)	120	240	350	500	600	V
V_{DWM}	Crest Working off-state Voltage	100	200	300	400	500	V
V_D	Continuous off-state Voltage	100	200	300	400	500	V
V_{DRM}	Repetitive peak off-state voltage (δ = 0.01 ; f=50Hz)	120	240	350	500	600	V²)
V_{DSM}	Non-repetitive peak off-state voltage (t<10ms)	120	240	350	500	600	V²)

Currents

Symbol	Ratings		BTX18-100	BTX18-200	BTX18-300	BTX18-400	BTX18-500	
$I_{T(AV)}$	Average on-state current (averaged over any 20 ms period)	T_{CASE}=105°C	Max : 1.0					A
		T_{AMB}=60°C, in free air	Max : 250					mA
I_T	On-state Current (D.C.) T_{CASE}=100°C		Max : 1.6					A
$I_{T(RMS)}$	RMS on-state Current		Max : 1.6					A

BTX18-100/BTX18-200/BTX18-300
BTX18-400/BTX18-500

Symbol	Ratings	BTX18-100	BTX18-200	BTX18-300	BTX18-400	BTX18-500	
I_{TRM}	Repetitive Peak on-state Current	Max : 10					A
I_{TSM}	Non-repetitive peak on-state current t=10ms ; T_J=125°C prior to surge	10 A					V
T_J T_{stg}	Junction Temperature Storage Temperature	Max : 125°C -55 to +125°C					°C

1) These ratings apply for zero or negative bias on the gate with respect to the cathode, and when a resistor R<1 kΩ is connected between gate and cathode
2) The device is not suitable for operation in the forward breakover mode.

Gate to Cathode - Ratings

With 1Ω resistor between gate and cathode

Symbol	Ratings	BTX18-100	BTX18-200	BTX18-300	BTX18-400	BTX18-500	
V_{FGM}	Forward Peak Voltage	Max : 10 V					V
V_{RGM}	Reverse Peak Voltage	Max : 5 V					V
I_{FGM}	Forward Peak Current	Max : 0.2					A
$P_{G(AV)}$	Average Power Dissipation (averaged over any 20 ms period)	Max : 0.05					W
P_{GM}	Peak Power Dissipation	Max : 0.5					W

Temperatures

Symbol	Ratings	BTX18-100	BTX18-200	BTX18-300	BTX18-400	BTX18-500	
$R_{th\ j\text{-}c}$	From Junction to Case	10					°C/W
$R_{th\ j\text{-}a}$	From Junction to Ambient	200					°C/W
$Z_{th\ j\text{-}c}$	Transient Thermal Resistance (t=10 ms)	2.5					°C/W

Anode to Cathode - Characteristics

Symbol	Ratings		BTX18-100	BTX18-200	BTX18-300	BTX18-400	BTX18-500	
V_T	On State Voltage I_T=1.0 A, T_j=25°C	<	1.5	1.5	1.5	1.5	1.5	V[1])

Symbol	Ratings		BTX18 -100	BTX18 -200	BTX18 -300	BTX18 -400	BTX18 -500	
I_{RM}	Peak Reverse Current $V_{RM}=V_{RWmax}$; T_j=125°C	<	800	400	275	200	160	µA
I_{DM}	Peak off-state Current $V_{DM}=V_{DWmax}$; T_j=125°C	<	800	400	275	200	160	µA
I_L	Latching current, T_j=125°C		Typ : 10					mA
I_H	Holding Current ; T_j=25°C	<	5.0 [2])					mA

Gate to Cathode – Characteristics

Symbol	Ratings		BTX18 -100	BTX18 -200	BTX18 -300	BTX18 -400	BTX18 -500	
V_{GT}	Voltage that will trigger all devices T_j=25°C	>	2.0					V
V_{GD}	Voltage that will not trigger any device T_j=125°C	<	200					mV
I_{GT}	Current that vill trigger all devices T_j=25°C	>	5.0					mA

Switching Characteristics

Symbol	Ratings			BTX18 -100	BTX18 -200	BTX18 -300	BTX18 -400	BTX18 -500	
Turn off time when switched from IT=300 mA to IR=175 mA		T_j=25°C	t_q	Type : 20					µs
		T_j=125°C		Typ : 35					
I_{DM}	Peak off-state Current $V_{DM}=V_{DWmax}$; T_j=125°C		<	800	400	275	200	160	µs

1) V_T is measured along the leads at 1 cm from the case
2) Measurer under the following conditiond :
   Anode sypply voltage= +6.0V
   Initial on-state current after gate triggering= 50mA
   The current is reduced until the device turns of.

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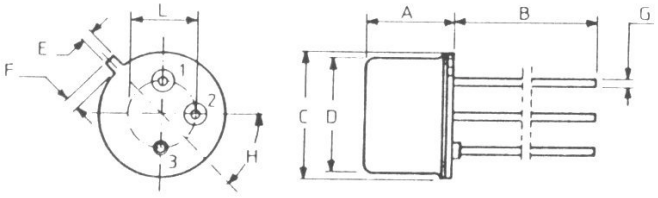
MECHANICAL DATA CASE TO-39

DIMENSIONS		
	mm	inches
A	6,71	0,26
B	13,2	0,51
C	9,23	0,36
D	8,34	0,32
E	0,8	0,03
F	0,8	0,03
G	0,42	0,016
H	45°	
L	4,97	0,2



Pin 1 :	Kathode
Pin 2 :	Gate
Pin 3 :	Anode