

**GENERAL DESCRIPTION**

Planar passivated high commutation triacs in a plastic envelope intended for use in circuits where high static and dynamic dV/dt and high dI/dt can occur. These devices will commutate the full rated rms current at the maximum rated junction temperature, without the aid of a snubber.

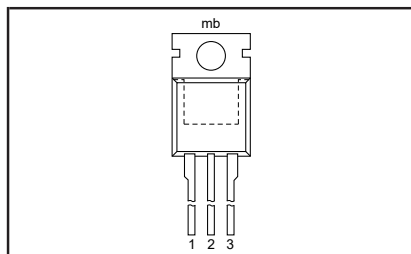
**QUICK REFERENCE DATA**

SYMBOL	PARAMETER	MAX.	MAX.	MAX.	UNIT
$V_{DRM}$	<b>BTA216-</b> Repetitive peak off-state voltages	<b>500B</b> 500	<b>600B</b> 600	<b>800B</b> 800	V
$I_{T(RMS)}$	RMS on-state current	16	16	16	A
$I_{TSM}$	Non-repetitive peak on-state current	140	140	140	A

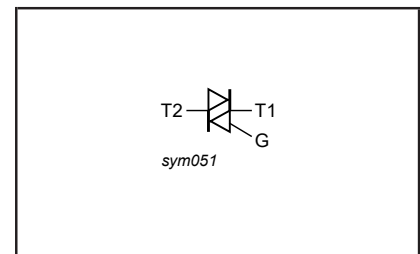
**PINNING - TO220AB**

PIN	DESCRIPTION
1	main terminal 1
2	main terminal 2
3	gate
tab	main terminal 2

**PIN CONFIGURATION**



**SYMBOL**



**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.			UNIT
				-500 500 <sup>1</sup>	-600 600 <sup>1</sup>	-800 800	
$V_{DRM}$	Repetitive peak off-state voltages		-				V
$I_{T(RMS)}$	RMS on-state current	full sine wave; $T_{mb} \leq 99\text{ }^{\circ}\text{C}$	-	16			A
$I_{TSM}$	Non-repetitive peak on-state current	full sine wave; $T_j = 25\text{ }^{\circ}\text{C}$ prior to surge	-	140			A
$I^2t$	$I^2t$ for fusing	$t = 20\text{ ms}$	-	150			A
$dI_T/dt$	Repetitive rate of rise of on-state current after triggering	$t = 16.7\text{ ms}$	-	98			A <sup>2</sup> s
$I_{GM}$	Peak gate current	$I_{TM} = 20\text{ A}; I_G = 0.2\text{ A};$ $dI_G/dt = 0.2\text{ A}/\mu\text{s}$	-	100			A/ $\mu\text{s}$
$V_{GM}$	Peak gate voltage		-	2			A
$P_{GM}$	Peak gate power		-	5			V
$P_{G(AV)}$	Average gate power	over any 20 ms period	-	5			W
$T_{stg}$	Storage temperature		-40	150			$^{\circ}\text{C}$
$T_j$	Operating junction temperature		-	125			$^{\circ}\text{C}$

**THERMAL RESISTANCES**

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th\ j-mb}$	Thermal resistance junction to mounting base	full cycle	-	-	1.2	K/W
$R_{th\ j-a}$	Thermal resistance junction to ambient	half cycle in free air	-	60	1.7	K/W

**STATIC CHARACTERISTICS**

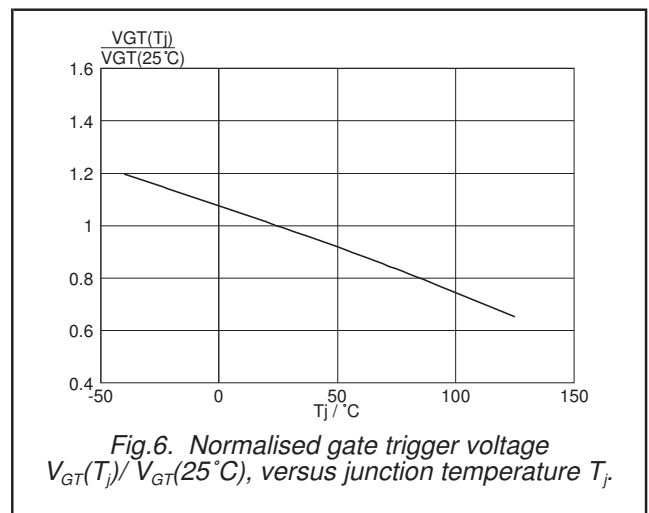
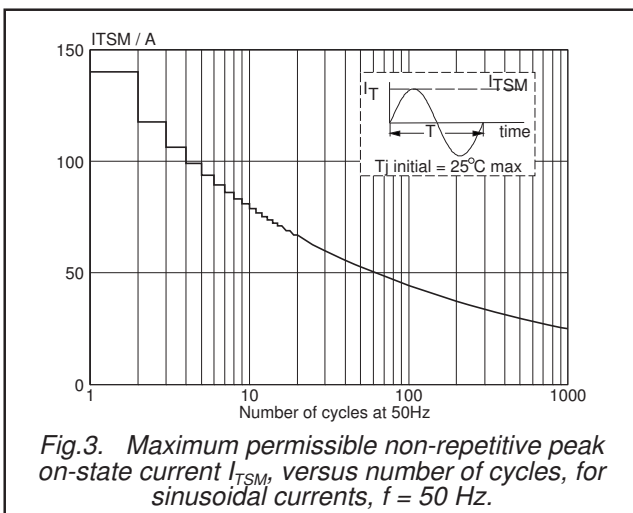
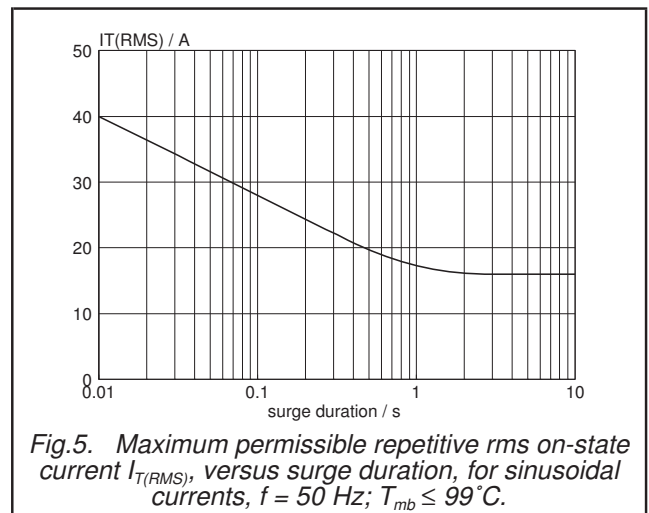
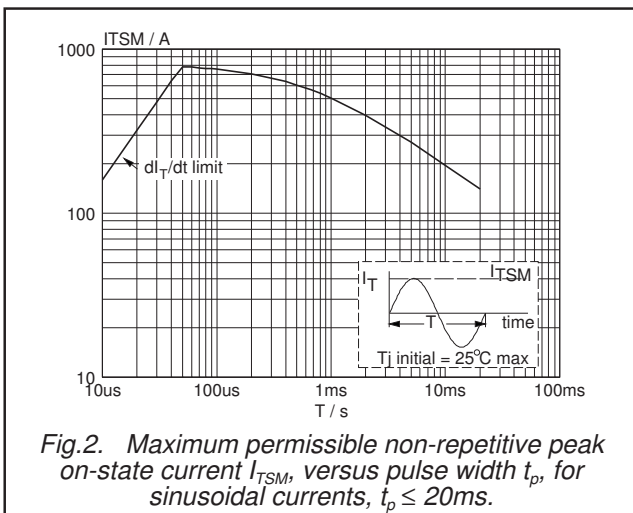
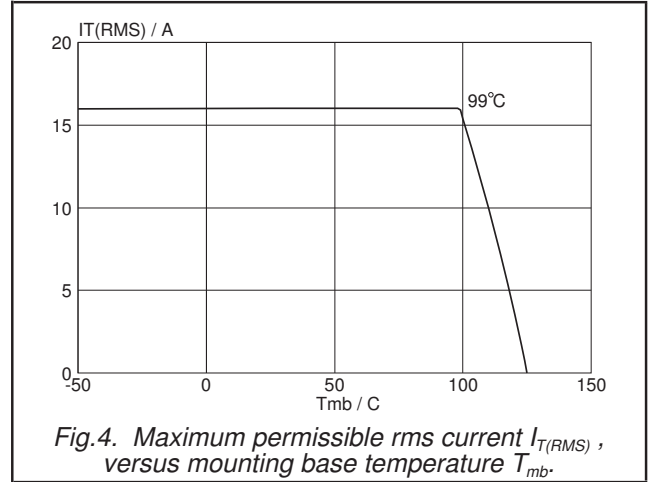
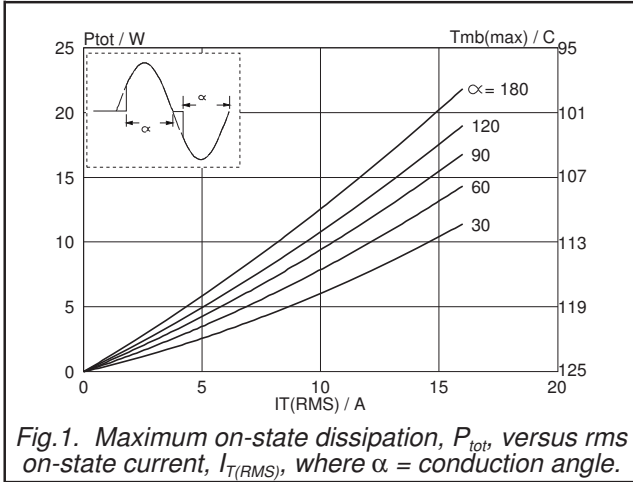
$T_j = 25\text{ °C}$  unless otherwise stated

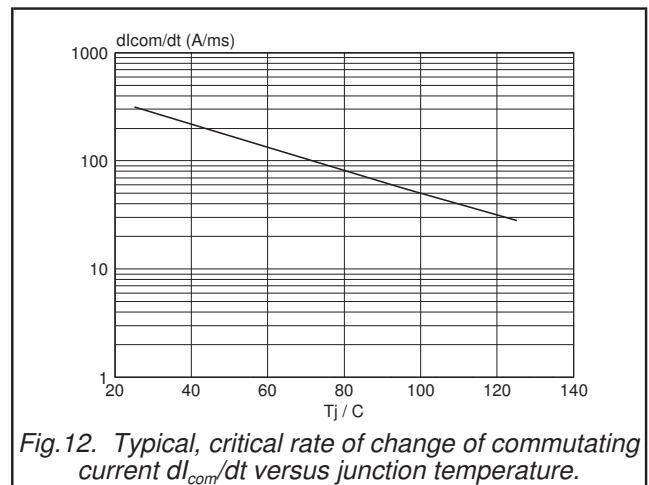
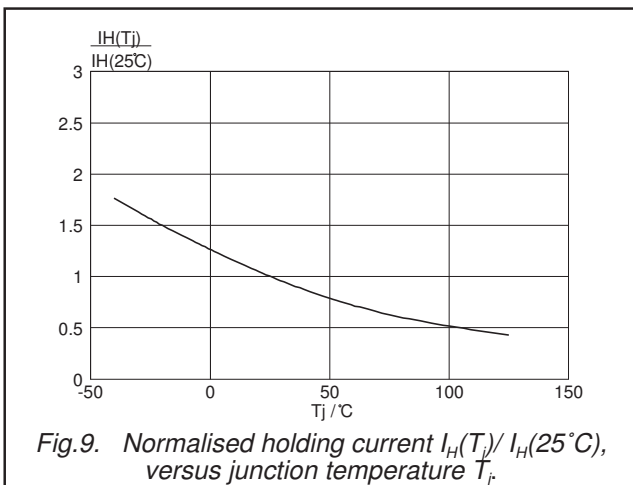
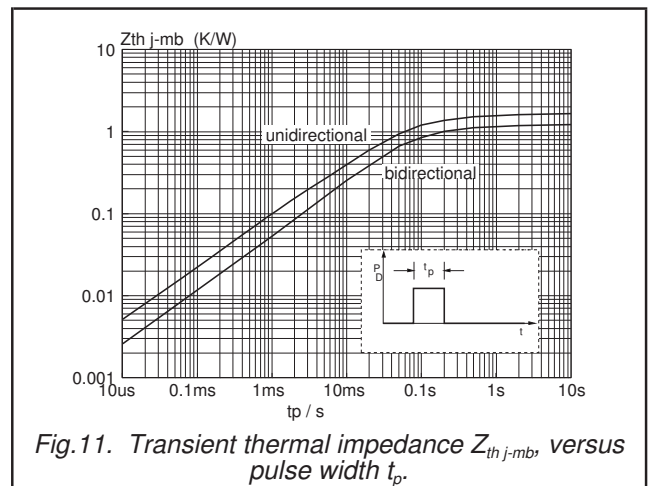
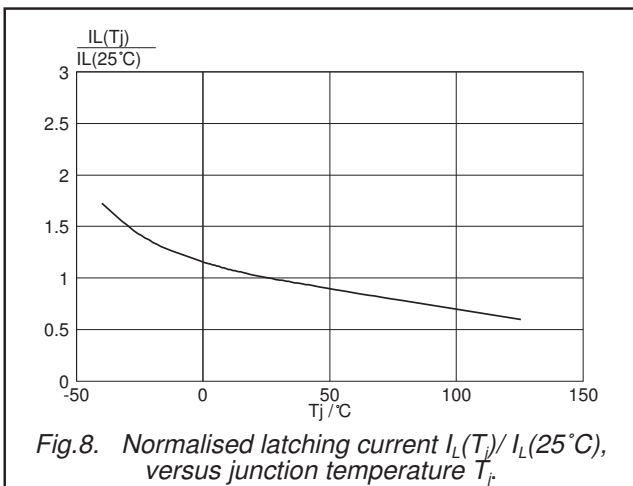
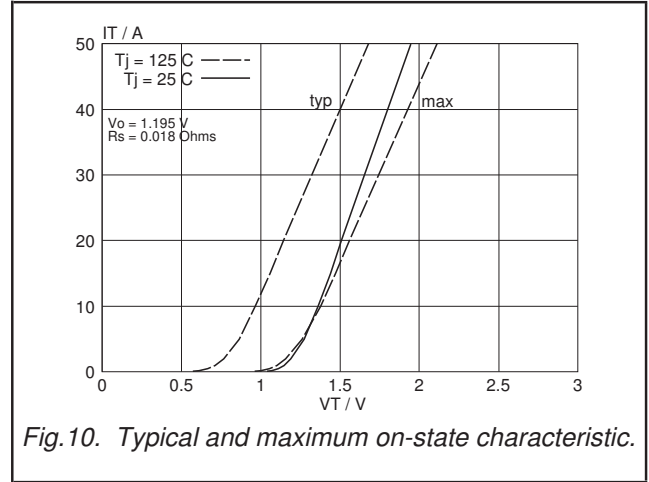
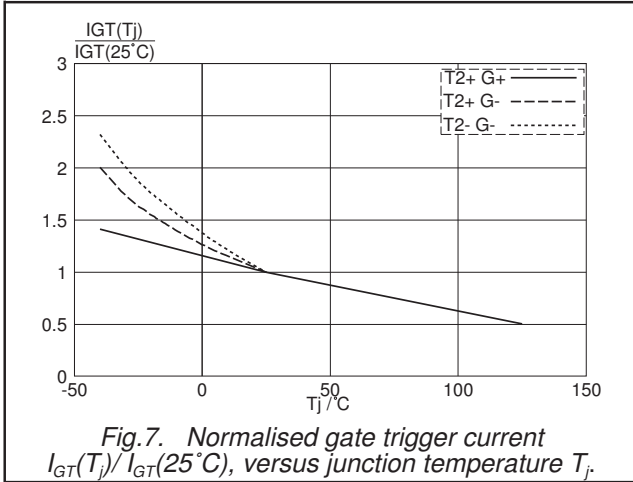
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$I_{GT}$	Gate trigger current <sup>2</sup>	$V_D = 12\text{ V}; I_T = 0.1\text{ A}$				
		T2+ G+	2	18	50	mA
		T2+ G-	2	21	50	mA
		T2- G-	2	34	50	mA
$I_L$	Latching current	$V_D = 12\text{ V}; I_{GT} = 0.1\text{ A}$				
		T2+ G+	-	31	60	mA
		T2+ G-	-	34	90	mA
		T2- G-	-	30	60	mA
$I_H$	Holding current	$V_D = 12\text{ V}; I_{GT} = 0.1\text{ A}$	-	31	60	mA
$V_T$	On-state voltage	$I_T = 20\text{ A}$	-	1.2	1.5	V
$V_{GT}$	Gate trigger voltage	$V_D = 12\text{ V}; I_T = 0.1\text{ A}$	-	0.7	1.5	V
$I_D$	Off-state leakage current	$V_D = 400\text{ V}; I_T = 0.1\text{ A}; T_j = 125\text{ °C}$	0.25	0.4	-	V
		$V_D = V_{DRM(max)}; T_j = 125\text{ °C}$	-	0.1	0.5	mA

**DYNAMIC CHARACTERISTICS**

$T_j = 25\text{ °C}$  unless otherwise stated

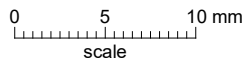
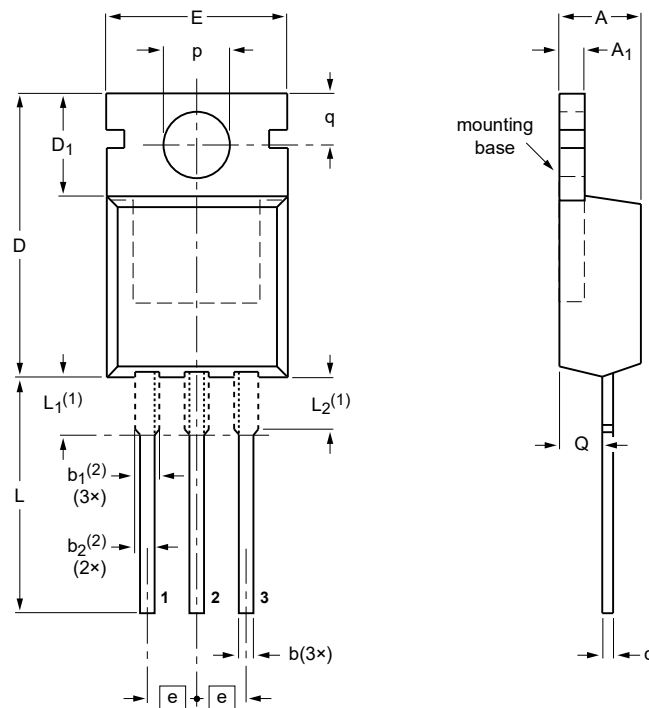
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$dV_D/dt$	Critical rate of rise of off-state voltage	$V_{DM} = 67\% V_{DRM(max)}; T_j = 125\text{ °C};$ exponential waveform; gate open circuit	1000	4000	-	V/ $\mu$ s
$dI_{com}/dt$	Critical rate of change of commutating current	$V_{DM} = 400\text{ V}; T_j = 125\text{ °C}; I_{T(RMS)} = 16\text{ A};$ without snubber; gate open circuit	-	28	-	A/ms
$t_{gt}$	Gate controlled turn-on time	$I_{TM} = 20\text{ A}; V_D = V_{DRM(max)}; I_G = 0.1\text{ A};$ $dI_G/dt = 5\text{ A}/\mu\text{s}$	-	2	-	$\mu$ s





Plastic single-ended package; heatsink mounted; 1 mounting hole; 3-lead TO-220AB

SOT78



**DIMENSIONS (mm are the original dimensions)**

UNIT	A	A <sub>1</sub>	b	b <sub>1</sub> (2)	b <sub>2</sub> (2)	c	D	D <sub>1</sub>	E	e	L	L <sub>1</sub> (1)	L <sub>2</sub> (1) max.	p	q	Q
mm	4.7 4.1	1.40 1.25	0.9 0.6	1.6 1.0	1.3 1.0	0.7 0.4	16.0 15.2	6.6 5.9	10.3 9.7	2.54	15.0 12.8	3.30 2.79	3.0	3.8 3.5	3.0 2.7	2.6 2.2

**Notes**

1. Lead shoulder designs may vary.
2. Dimension includes excess dambar.

**IMPORTANT NOTICE – PLEASE READ CAREFULLY**

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