

EVVOSEMI[®]

THINK CHANGE DO



ESD



TVS



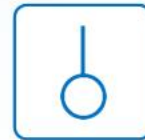
MOS



LDO



Diode



Sensor



DC-DC

Product Specification

▶ Domestic	Part Number	BTA16
▶ Overseas	Part Number	BTA16
▶ Equivalent	Part Number	BTA16

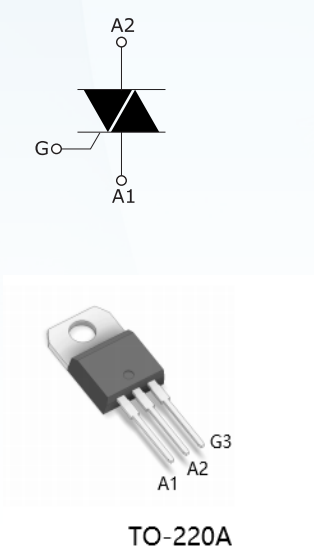
EV is the abbreviation of name EVVO

Product features and main applications:

NPNP five-layer structure of silicon bidirectional devices; with independent intellectual property rights of single-sided digging technology, table glass passivation process; multi-layer metallized electrodes on the back; with high blocking voltage and high temperature stability.

Mainly used in:

vacuum cleaners, power tools and other motor speed controllers; solid state relays; heating controllers (temperature regulation); other phase control circuits.



Characteristics

Table 1. Absolute maximum ratings (Tj = 25°C unless otherwise stated)

Symbol	Parameter name			value	Unit
$I_{T(RMS)}$	RMS on-state current (full sine wave)	BTA	$T_c=80^{\circ}C$	16	A
I_{TSM}	Non repetitive surge peak on-state current (full cycle, T_j initial = $25^{\circ}C$)	$F=50HZ$ $t_p=20ms$		160	A
I^2t	I^2t value for fusing	$t_p=10ms$		144	A^2S
di/dt	Critical rate of rise of on-state current $I_G = 2 \times I_{GT}$, $t_r \leq 100\text{ ns}$	$T_j=125$		50	A/us

$V_{\text{DRM}}/V_{\text{RRM}}$	Off state repetitive peak voltage Reverse repetitive peak voltage	$T_j=25^{\circ}\text{C}$		600/800	V
I_{GM}	Peak gate current	$t_p=20\mu\text{s}$	$T_j=150^{\circ}\text{C}$	4	A
$P_{\text{G(AV)}}$	Average gate power dissipation		$T_j=150^{\circ}\text{C}$	1	W
T_{stg} T_j	Storage junction temperature range Operating junction temperature range			-40 to+150 -40 to+150	$^{\circ}\text{C}$

Table 2. Electrical characteristics ($T_j = 25^{\circ}\text{C}$, unless otherwise specified) -- 3 quadrants

Symbol	Name and test conditions	Quadrant	Range	value			Unit	
I_{GT}	$V_D=12V$ $R_L=100\Omega$	I II III	MAX	Min	Typ	Max	mA	
				15	25	35		
V_{GT}	MAX		1.5			V		
V_{GD}	V_D V_{DRM} R $3.3\text{ k}\Omega$, T_j		MIN	0.2			V	
I_H	$I_T = 100\text{ mA}$		MAX	60			mA	
I_L	$I_G = 1.2 \times I_{GT}$		MAX		60		mA	
					100			
dv/dt	$V_D = 67\% V_{DRM}$, gate open, $T_j = 125\text{ }^{\circ}\text{C}$		MIN	500			V/us	
$(dv/dt)_c$	Critical rise rate of commutation voltage $T_J = 150\text{ }^{\circ}\text{C}$		MIN	10			V/us	

Table 3. Electrical characteristics (T_j = 25 °C, unless otherwise specified) -Standard Triac (4 quadrants)

Symbol	Name and test conditions	Quadrant	Range	value				Unit
I _{GT}	V _D =12V R _L =100Ω	I - II -III	MAX	I	II	III	IV	mA
				≦ 25	≦ 35	≦ 35	≦ 120	
V _{GT}	VD = VDRM, RL = 3.3 kΩ , Tj = 125 ° C	IV	MAX	1.5				V
V _{GD}			MIN	0.2				V
I _H	I _T =500mA		MAX	60				mA
I _L	IG = 1.2 x IGT		MAX	60				mA
				100				
dv/dt	VD = 67% VDRM, gate open, Tj = 125 °C		MIN	500				V/us
(dv/dt)c	Critical rise rate of commutation voltage TJ = 150 °C		MIN	10				V/us

Static parameters

Symbol	Parameter name			value	Unit
V _{TM}	I _{TM} = 32A	T _j =25°C	MAX	1.50	V
V _{T0}	threshold on-state voltage	T _j =150°C	MAX	0.87	V
R _d	Dynamic resistance	T _j =150°C	MAX	14.6	mΩ
I _{DRM} I _{RRM}	V _{DRM} = V _{RRM}	T _j =25°C T _j =150°C	MAX	5	uA
				1	mA
R _{th(j-c)}	Junction to ambient	BTA	MAX	2.10	°C/W

BTA16 characteristic curve

FIG.1 Maximum power dissipation versus RMS on-state current

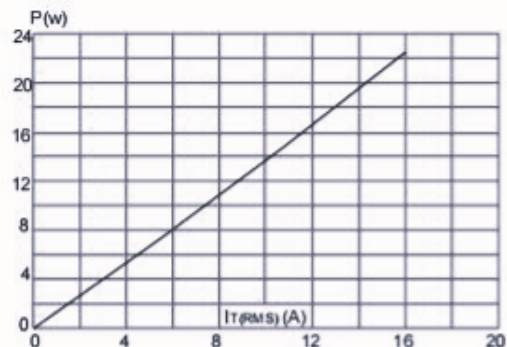
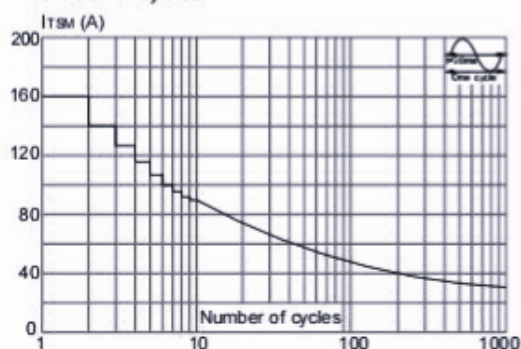


FIG.3: Surge peak on-state current versus number of cycles



sinusoidal pulse with width $t_p < 20ms$, and
 average value of $I^2 t$ ($dI/dt < 50A/\mu s$)
 $I^2 t (A^2 s)$

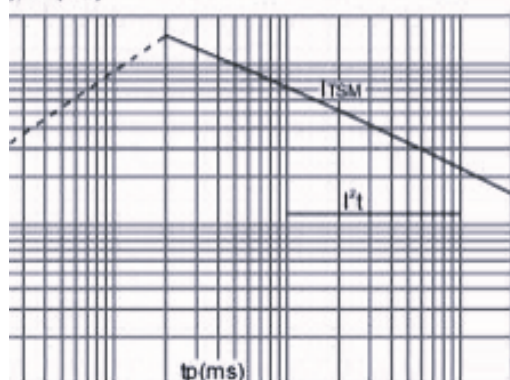


FIG.2: RMS on-state current versus case temperature

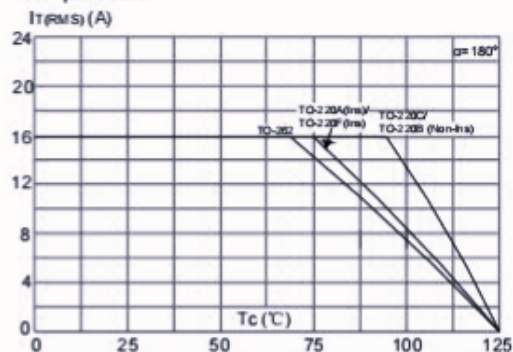
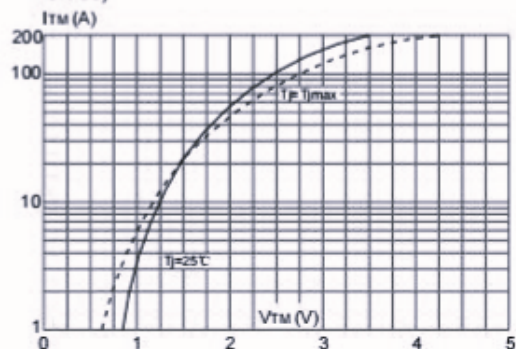
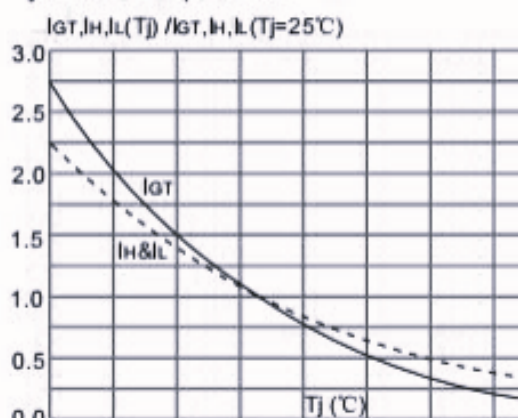
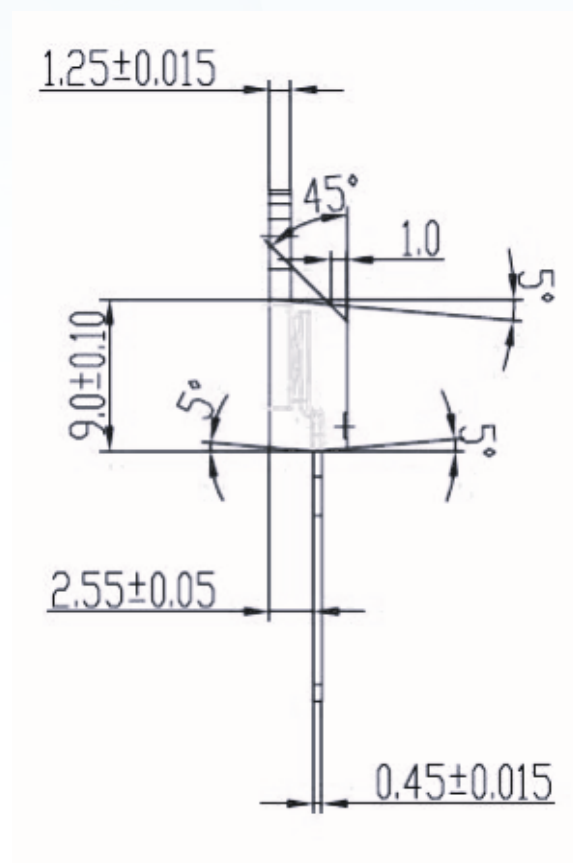
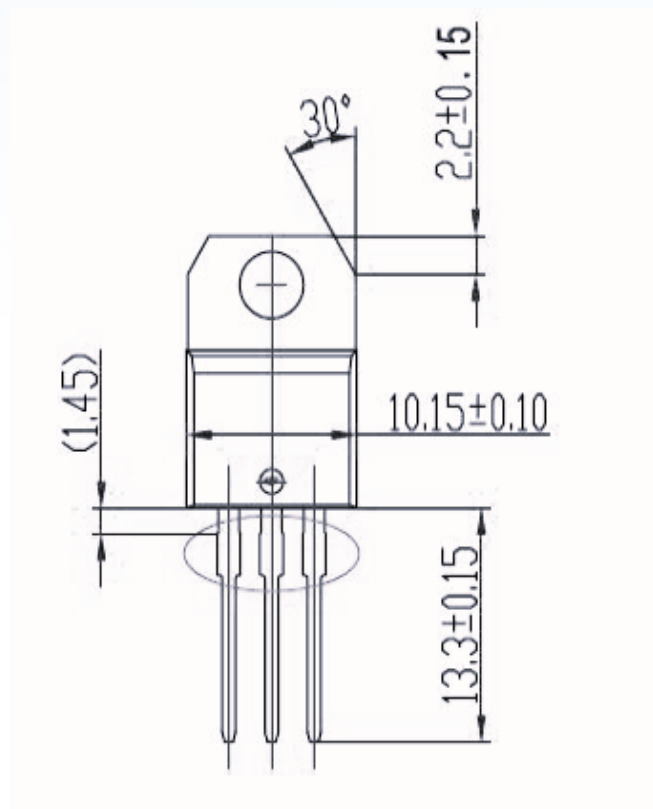


FIG.4: On-state characteristics (maximum values)



holding current and latching current versus
 junction temperature



TO-220A Dimensional drawing:Unit: mm (± 0.1)

Ordering information

Order code	Package	Baseqty	Deliverymode
BTA16-600BRG	TO-220A	1000	Tube and box
BTA16-600CRG	TO-220A	1000	Tube and box
BTA16-800BRG	TO-220A	1000	Tube and box
BTA16-600BWRG	TO-220A	1000	Tube and box
BTA16-600CWRG	TO-220A	1000	Tube and box
BTA16-800BWRG	TO-220A	1000	Tube and box
BTA16-800CWRG	TO-220A	1000	Tube and box
BTA16-600SWRG	TO-220A	1000	Tube and box
BTA16-800SWRG	TO-220A	1000	Tube and box

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