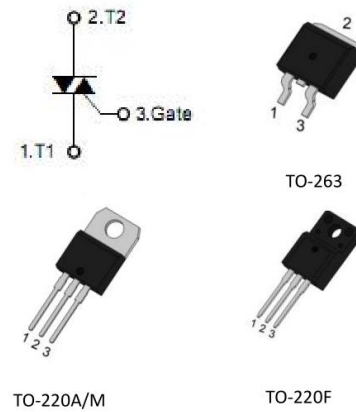


Applications

Mainly used for voltage regulation circuit, such as dimming, thermal control; home appliance such as microwave ovens, washing machines, electric fans, water dispensers, night light control circuit and used for ac phase, chopper, inverter, the inverter and solid state relay circuits.



Features

Adopt advanced glass passivation technology, low pass state pressure drop, high reliability, stability.

Absolute maximum ratings($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Test conditions		Type	Unit
V_{DRM}	Peak Repetitive Off-State Voltage		600/800	V
V_{RRM}	Peak Repetitive Reverse Blocking Voltage		600/800	V
$I_{\text{T(RMS)}}$	On-State RMS Current(full sine wave)		16	A
I_{TSM}	Non-Repetitive Peak on-state Current	F = 50 Hz t=20ms	160	
		F = 60 Hz t=16.7ms	168	
I^2t	$I_G = 2 \times I_{\text{GT}}$, $t_r \leq 100 \text{ ns}$	$t_p = 10 \text{ ms}$	144	A^2s
di/dt	Repetitive rate of rise of on-state current after triggering	F = 120 Hz $T_j=125^{\circ}\text{C}$	50	$\text{A}/\mu\text{s}$
I_{GM}	Forward Peak Gate Voltage	$t_p = 20 \mu\text{s}$ $T_j=125^{\circ}\text{C}$	4	A
PG(AV)	Average gate power	$T_j=125^{\circ}\text{C}$	1	W
T_{stg}	Storage Temperature Range		- 40 to + 150	$^{\circ}\text{C}$
T_j	Operating Junction Temperature		- 40 to + 125	

Electrical characteristics($T_a=25^{\circ}\text{C}$ unless otherwise specified)
3Quadrants

Symbol	Test conditions			SW	CW	BW	Unit	
I_{GT}	$V_D = 12V R_L = 30 \Omega$	I、II、III	MAX	10	35	50	mA	
V_{GT}				1.3				V
V_{GD}	$V_D = V_{DRM} R_L = 3.3k\Omega T_j = 125^{\circ}\text{C}$		MIN	0.2			V	
I_H	$I_T = 100\text{mA}$	I、III	MAX	15	35	50	mA	
I_L	$I_G = 1.2 I_{GT}$				25	50		70
				II	30	60		80
dV/dt	$V_D = 67\%V_{DRM}$ gate open $T_j = 125^{\circ}\text{C}$		MIN	40	400	1000	V/ μs	
$(di/dt)_c$	$(dV/dt)_c = 0.1 \text{ V}/\mu\text{s } T_j = 125^{\circ}\text{C}$		MAX	8.5	-	-	A/ms	
	$(dV/dt)_c = 10 \text{ V}/\mu\text{s } T_j = 125^{\circ}\text{C}$			3.0	-	-		
	Without snubber $T_j = 125^{\circ}\text{C}$			-	8.5	14		

4Quadrants

Symbol	Test conditions			C	B	Unit
I_{GT}	$V_D = 12V R_L = 30 \Omega$	I - II - III	MAX	25	50	mA
		IV		50	70	
V_{GT}	$V_D = V_{DRM} R_L = 3.3 k$ $T_j = 125^{\circ}\text{C}$	ALL	MAX	1.3		V
V_{GD}		ALL	MIN	0.2		
I_H	$I_T = 500 \text{ mA}$		MAX	25	50	mA
I_L	$I_G = 1.2 I_{GT}$	I - III - IV	MAX	40	60	
		II		80	120	
dV/dt	$V_D = 67\%V_{DRM}$ gate open $T_j = 125^{\circ}\text{C}$		MIN	200	400	V/ μs
$(dV/dt)_c$	$(di/dt)_c = 2.7 \text{ A}/\text{ms } T_j = 125^{\circ}\text{C}$		MIN	5	10	V/ μs

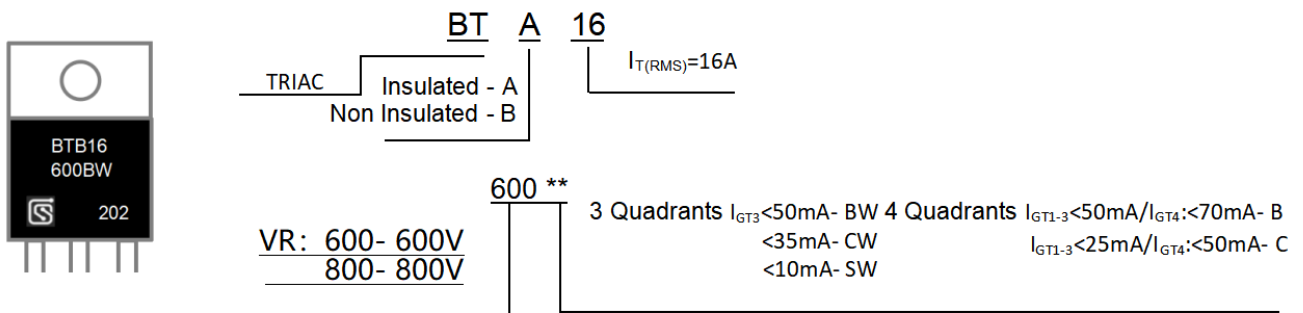
Packing

PACKAGE	Mode of packing	MOQ
TO-220A/M/F	Tube	50
TO-263	Tube	50
	Tape&Reel	800
Mode of Despatch	Expressage	

Maintaining Requirement

Temperature	10-30°C
Humidity	<60%
Time Limit	12 month
Status	storage

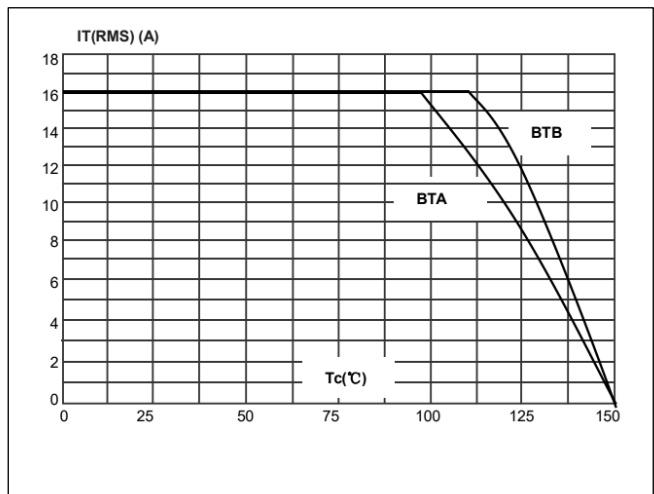
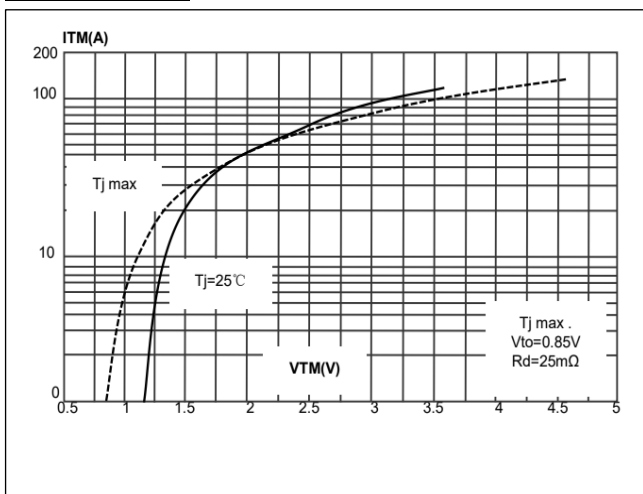
Naming & Marking

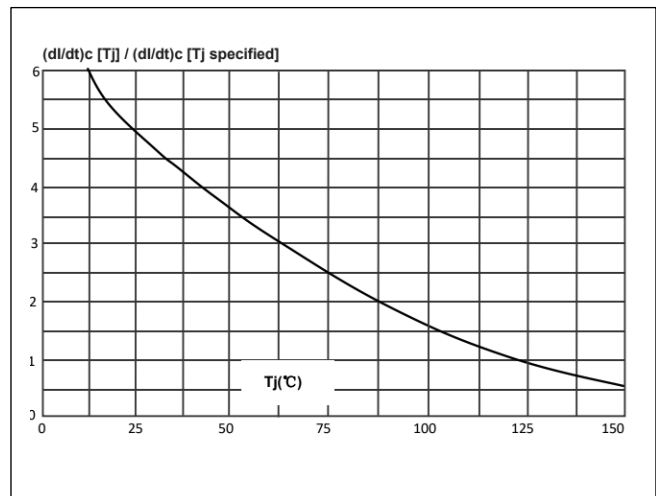
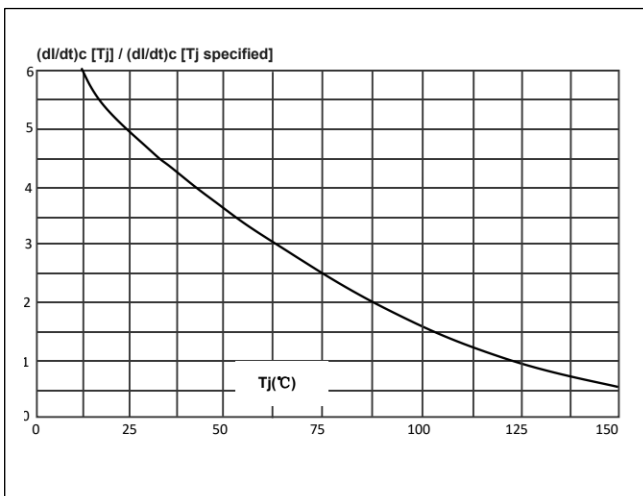
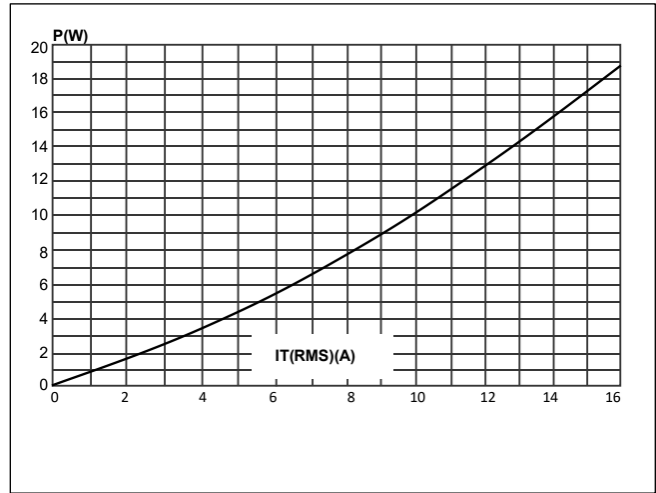
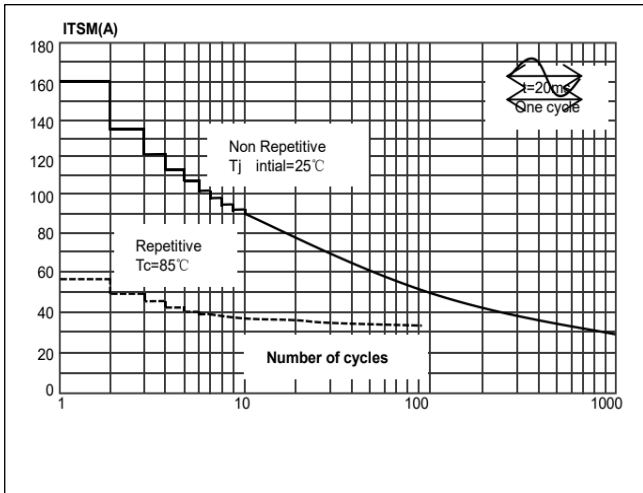


202:

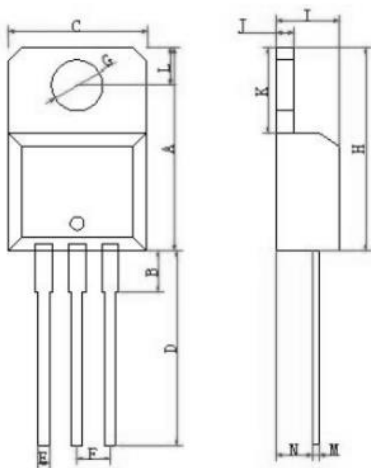
- first 2 is last digit of year 2022
- 02 means second week of 2022

Characteristics



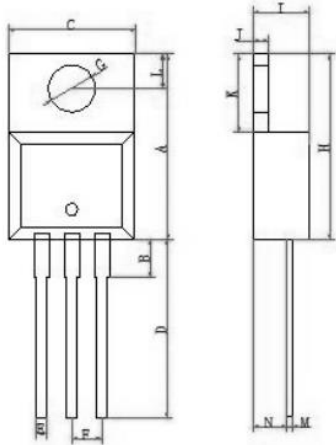


Dimension

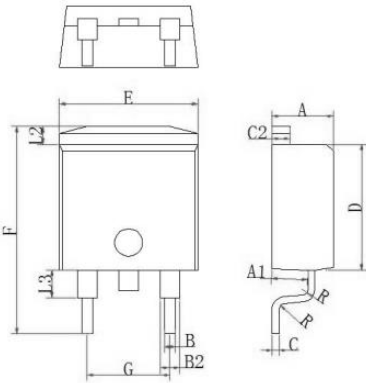


REF.	DIMENSIONS		REF.	DIMENSIONS	
	Millimeters			Millimeters	
	Type			Type	
A	15.25±0.3		H	15.25±0.3	
B	3.5±0.5		I	4.47±0.2	
C	10.1±0.2		J	1.28±0.1	
D	13.3±0.5		K	6.45±0.3	
E	0.81±0.2		L	2.85±0.3	
F	2.54±0.1		M	0.5±0.1	
G	3.78±0.2		N	2.65±0.3	

TO-220A/M


TO-220F

REF.	DIMENSIONS	REF.	DIMENSIONS
	Millimeters		Millimeters
	Type		Type
A	15.85±0.2	H	15.85±0.2
B	2.95±0.3	I	4.6±0.2
C	10.1±0.2	J	2.8±0.3
D	10.15±0.3	K	6.75±0.2
E	0.7±0.2	L	3.2±0.3
F	2.5±0.2	M	0.5±0.1
G	3.2±0.2	N	2.3±0.2


TO-263

REF.	DIMENSIONS	REF.	DIMENSIONS
	Millimeters		Millimeters
	Type		Type
A	4.5±0.2	E	10.1±0.15
A1	2.55±0.15	F	15.4±0.4
B	1.4±0.1	G	5.1±0.2
B2	0.8±0.1	L2	1.35±0.07
C	0.5±0.1	L3	1.65±0.15
C2	1.3±0.05	R	0.4
D	9.2±0.2		

Revision history of Specification

Version	Change Items	Effective Date
1.0	Initial Release	13-Aug-2021

