

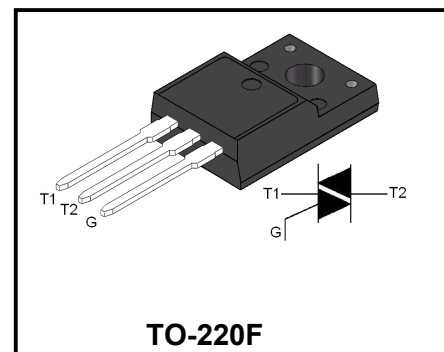
16A 4Quadrants TRIACs

Product Summary

Symbol	Value	Unit
$I_{T(RMS)}$	16	A
$V_{DRM} V_{RRM}$	600/800	V
V_{TM}	1.6	V

Features

With high ability to withstand the shock loading of large current, Provide high dv/dt rate with strong resistance to electromagnetic interference.



Application

Power charger, T-tools, massager, solid state relay, AC Motor speed regulation and so on.

Order Information

Part Number	Package	Marking	packing	Delivery Quantity
BT139F	TO-220F	BT139-600E XXXX	BOX	1000PCS/BOX
BT139F	TO-220F	BT139-800E XXXX	BOX	1000PCS/BOX

Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage	V_{DRM}	600/800	V
Repetitive peak reverse voltage	V_{RRM}	600/800	V
RMS on-state current	$I_{T(RMS)}$	16	A
Non repetitive surge peak on-state current	I_{TSM}	150	A
I^2t value for fusing (tp=10ms)	I^2t	98	A ² s
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	di/dt	I - II - III 50	A/ μ s
Peak gate current	I_{GM}	2	A
Average gate power dissipation	$P_G (AV)$	0.5	W
Junction Temperature	T_J	-40~+125	°C
Storage Temperature	T_{STG}	-40 ~+150	°C

Electrical characteristics (TA=25°C, unless otherwise noted)

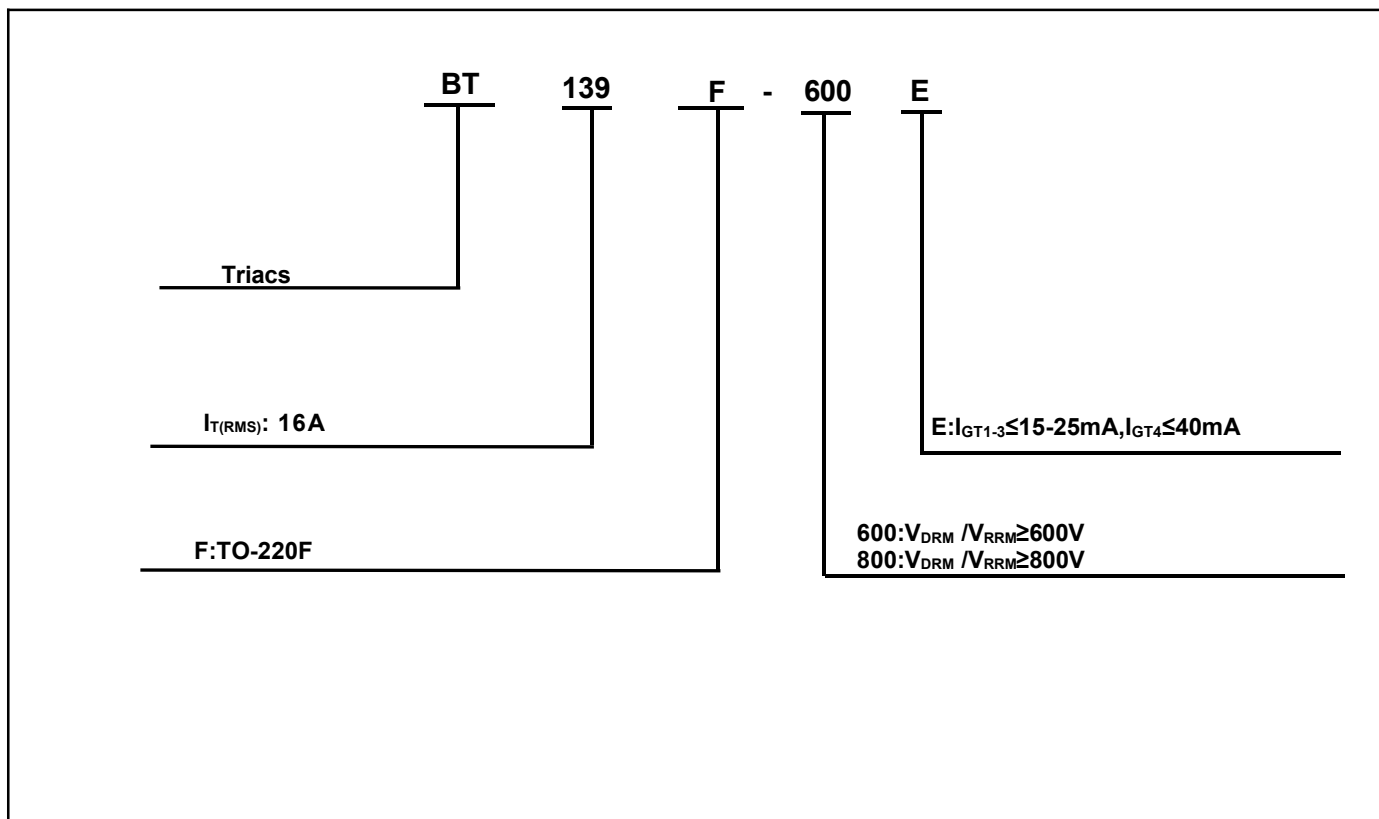
Parameter	Symbol	Test Condition		Value	Unit
				E	
Gate trigger current	I _{GT}	V _D = 12 V, I _T = 0.1 A	I - II -III	≤35	mA
			IV	≤50	mA
Gate trigger voltage	V _{GT}				≤0.4
Non-triggering gate voltage	V _{GD}	V _D =V _{DRM} T _J =125℃		≥1.5	V
Holding current	I _H	V _D = 12 V, I _{GT} = 0.1 A		≤50	mA
Latching current	I _L	V _D = 12 V; I _T = 0.1 A	I -III	≤50	mA
			II	≤60	
Critical-rate of rise of commutation voltage	dV/dt	V _D =2/3%V _{DRM} , T _J =125℃		≥50	V/μs

STATIC CHARACTERISTICS

On-state Voltage	V_{TM}	$I_T = 20\text{ A}$		≤ 1.6	V
Repetitive Peak Off-State Current	I_{DRM}	$V_D = V_{DRM} = V_{RRM}$	$T_j = 25^\circ\text{C}$	≤ 5	μA
Repetitive Peak Reverse Current	I_{RRM}		$T_j = 125^\circ\text{C}$	≤ 0.5	mA

THERMAL RESISTANCES

Thermal resistance	$R_{th(j-c)}$	Junction to case	TYP.	1.7	$^\circ\text{C/W}$
	$R_{th(j-a)}$	Junction to ambient	TYP.	60	$^\circ\text{C/W}$

Ordering Information


Typical Characteristics

FIG.1: Maximum power dissipation versus RMS on-state current (full cycle)

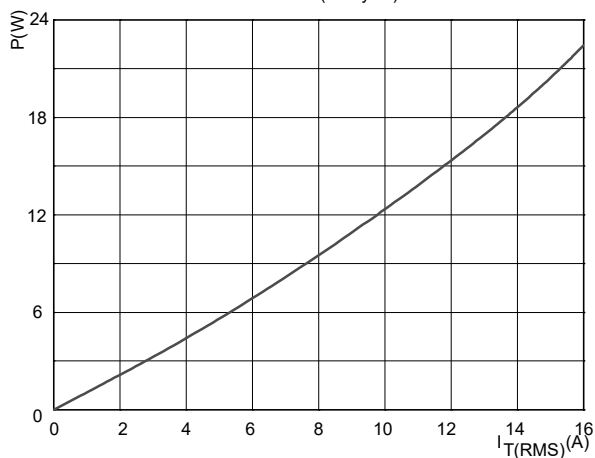


FIG.2: RMS on-state current versus case temperature (full cycle)

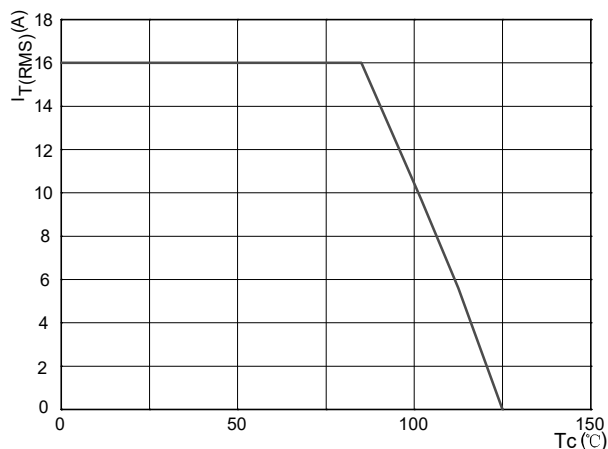


FIG.3: Surge peak on-state current versus number of cycles

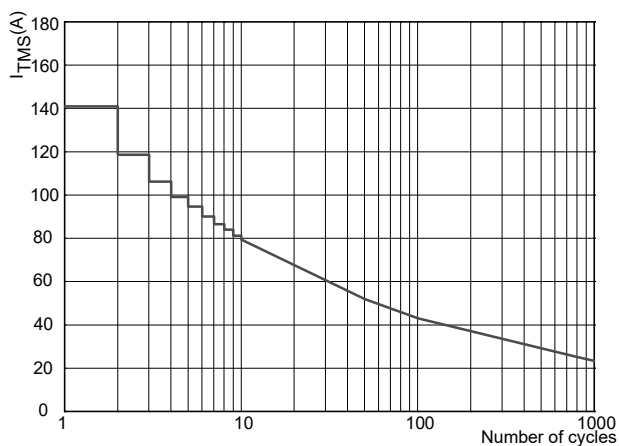
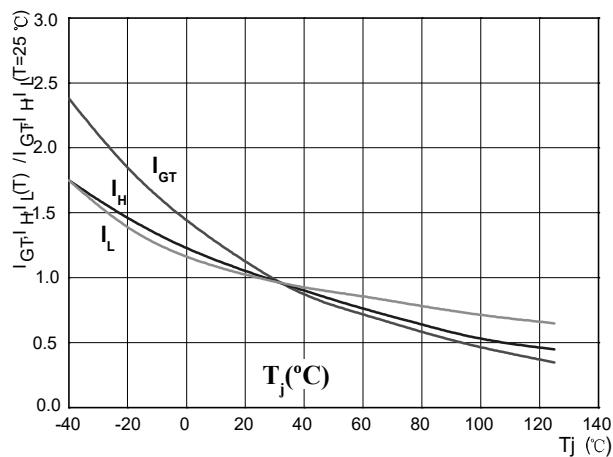
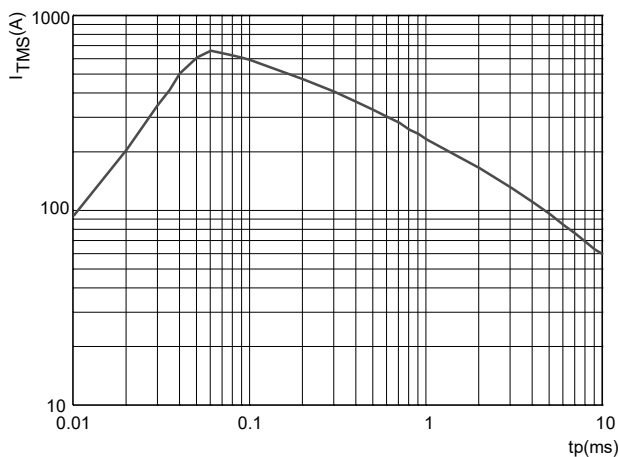
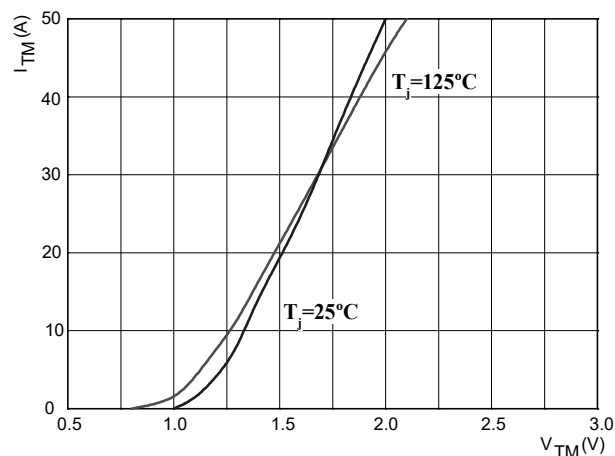


FIG.4: On-state characteristics (maximum values)



Package Dimensions

TO-220F

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.50	4.90	0.177	0.193
A1	2.34	2.74	0.092	0.108
A2	2.66	2.86	0.105	0.113
b	0.75	0.85	0.030	0.033
b1	1.24	1.44	0.049	0.057
c	0.40	0.60	0.016	0.024
D	10.00	10.32	0.394	0.406
E	15.75	16.05	0.620	0.632
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
F	3.10	3.5	0.122	0.138
L	12.90	13.50	0.531	0.547
L1	2.90	3.30	0.114	0.130
Φ	3.10	3.30	0.122	0.130