

16A 4Quadrants TRIACs
Product Summary

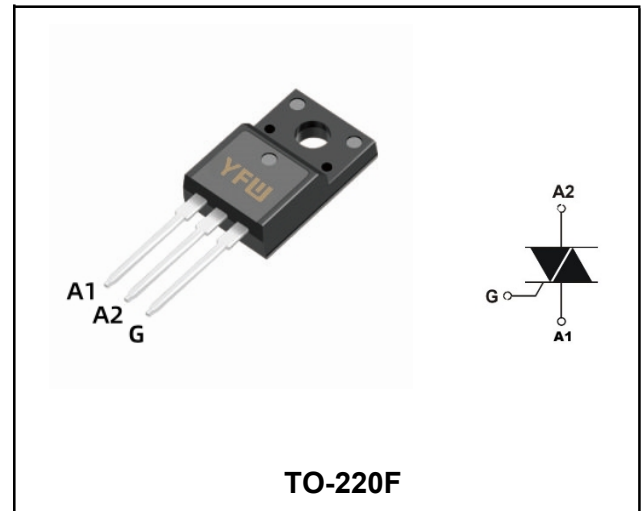
Symbol	Value	Unit
$I_{T(RMS)}$	16	A
$V_{DRM} V_{RRM}$	600/800	V
V_{TM}	1.6	V

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.


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)

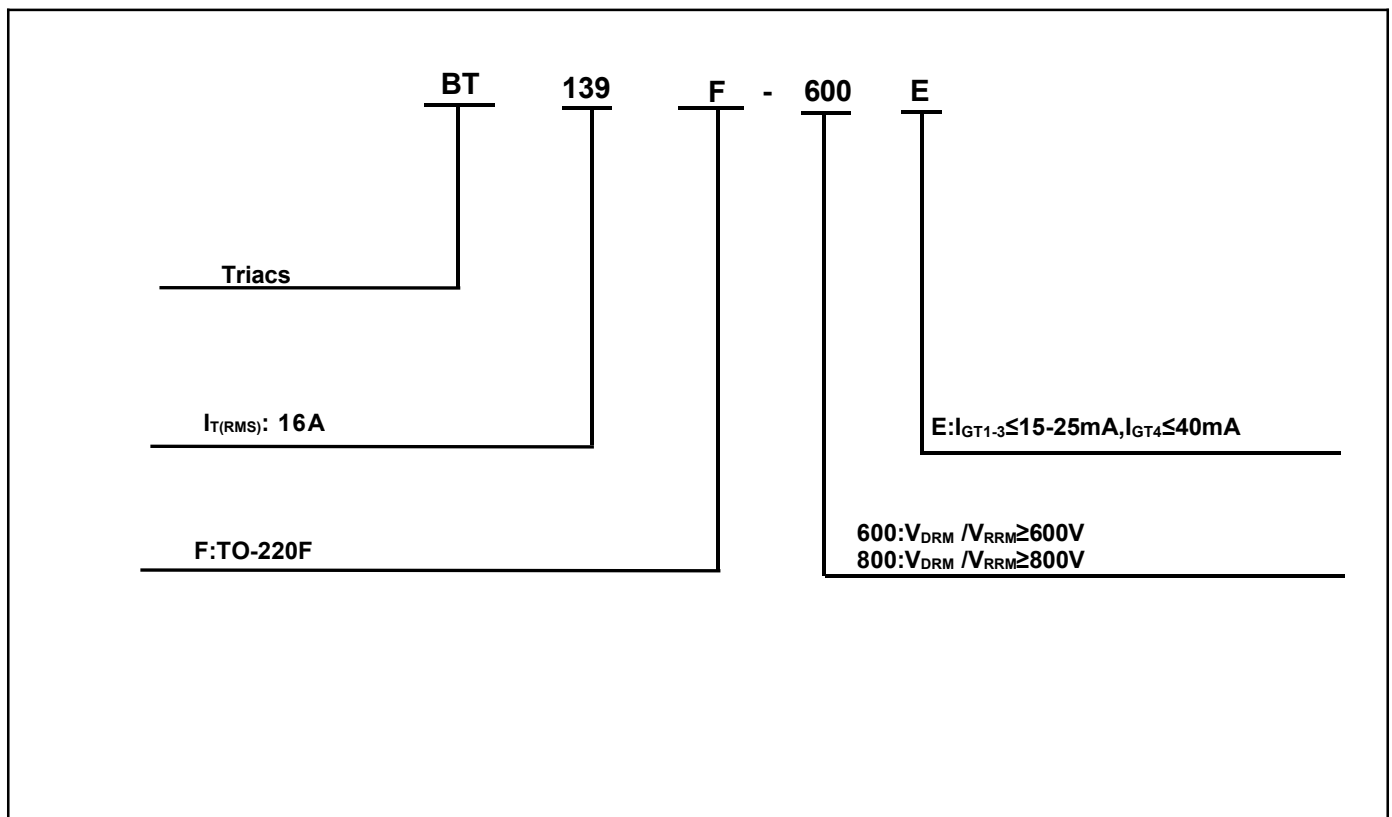
Parameter	Symbol	Test Condition	Value	Unit	
			E		
Gate trigger current	I_{GT}	$V_D = 12\text{ V}, I_T = 0.1\text{ A}$	I - II - III	≤ 35	mA
			IV	≤ 50	mA
Gate trigger voltage	V_{GT}			≤ 0.4	V
Non-triggering gate voltage	V_{GD}	$V_D = V_{DRM}, T_j = 125^\circ\text{C}$		≥ 1.5	V
Holding current	I_H	$V_D = 12\text{ V}, I_{GT} = 0.1\text{ A}$		≤ 50	mA
Latching current	I_L	$V_D = 12\text{ V}; I_T = 0.1\text{ A}$	I - III	≤ 50	mA
			II	≤ 60	
Critical-rate of rise of commutation voltage	dV/dt	$V_D = 2/3 V_{DRM}, T_j = 125^\circ\text{C}$		≥ 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)

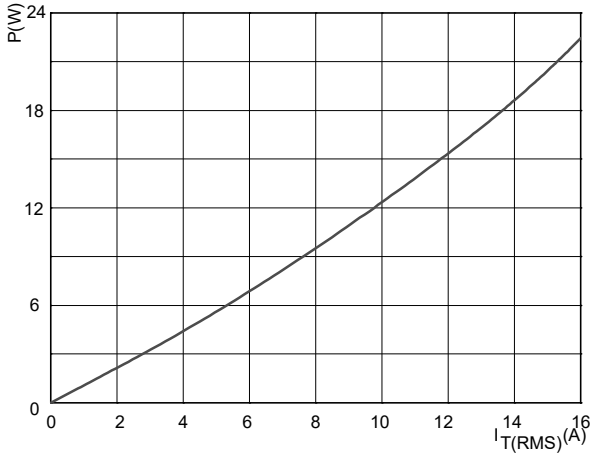


FIG.2: RMS on-state current versus case temperature (full cycle)

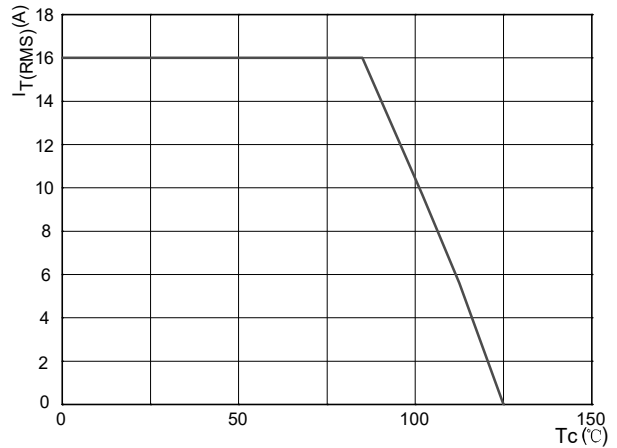


FIG.3: Surge peak on-state current versus number of cycles

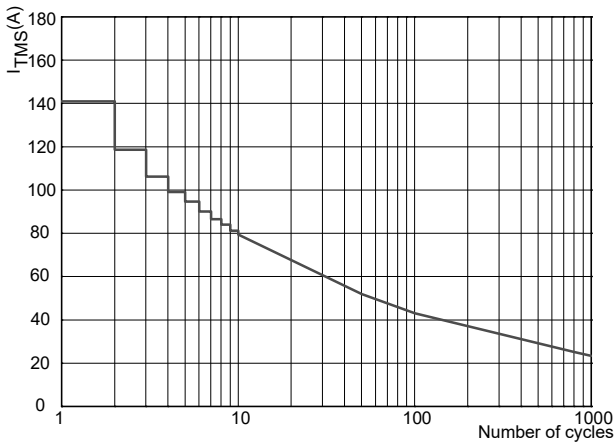
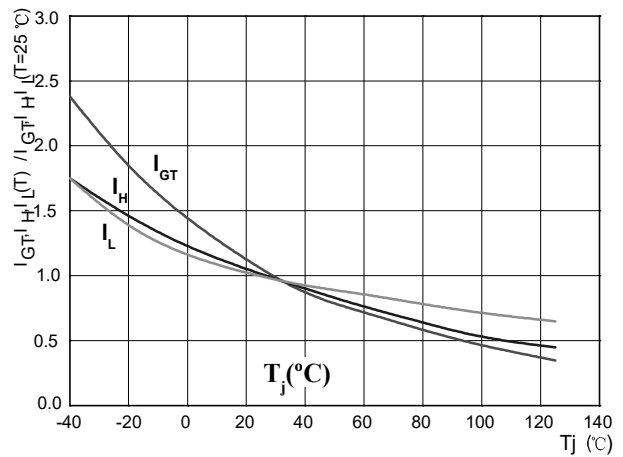
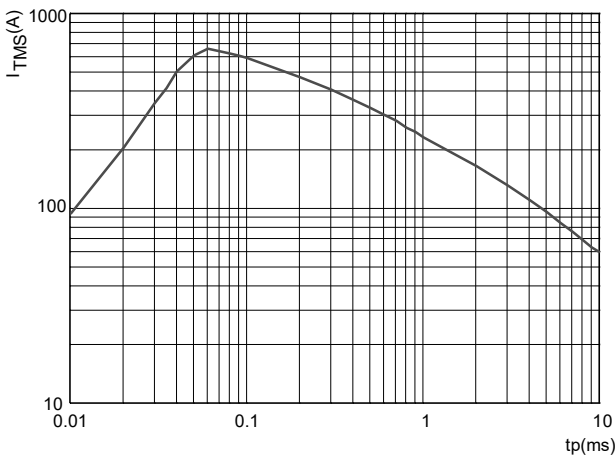
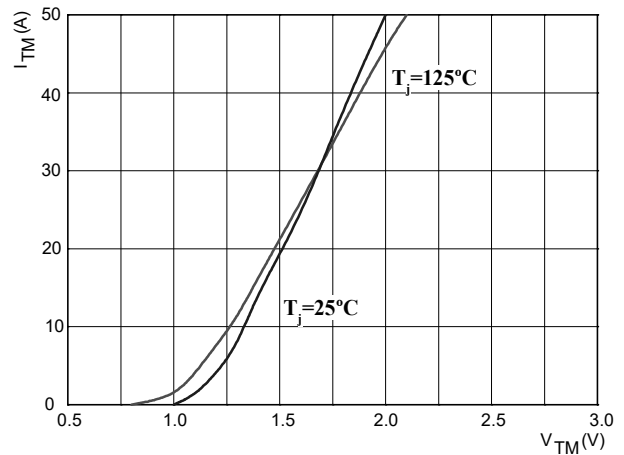
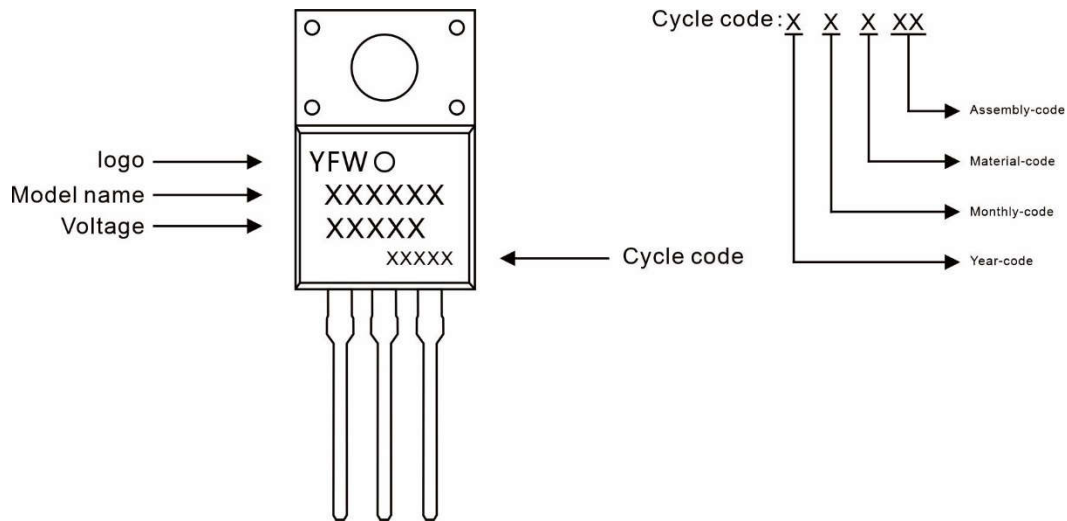


FIG.4: On-state characteristics (maximum values)



Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
BT139F	TO-220F	0.06oz(1.74g)	50pcs/tube	1000PCS/Box 5000PCS/Carton

Package Dimensions

TO-220F

Symbol	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	13.50	13.90	0.531	0.547
L1	2.90	3.30	0.114	0.130
Φ	3.10	3.30	0.122	0.130

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