

16A 4Quadrants TRIACs

Product Summary

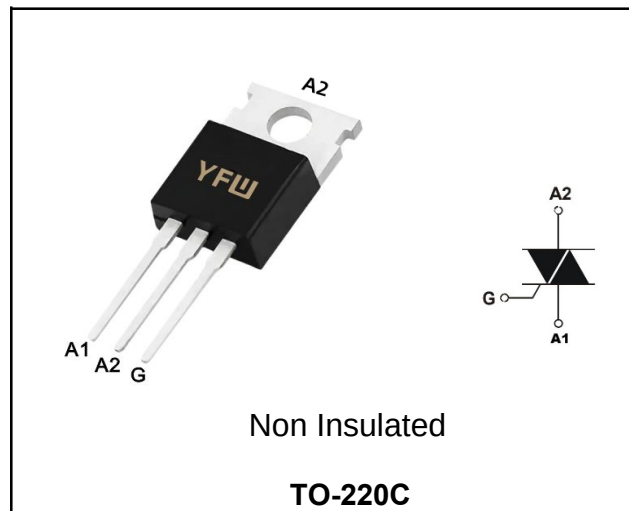
Symbol	Value	Unit
$I_{T(RMS)}$	16	A
$V_{DRM} V_{RRM}$	600/800	V
V_{TM}	1.55	V

Features

With high ability to withstand the shock loading of large current, With high commutation performances, 4 quadrants products especially recommended for use on inductive load.

Application

Washing machine, vacuums, 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 (full cycle, F=50Hz)	I_{TSM}	140	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_T/dt	I - II - III	50
		IV	10
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
				Min	Max	
Gate trigger current	I_{GT}	$V_D=12V$ $I_T=0.1A$ $T_j=25^{\circ}C$	I-II-III	-	10	mA
			IV	-	25	
Gate trigger voltage	V_{GT}		I-II-III-IV	-	1.3	V
Gate non-trigger voltage	V_{GD}	$V_D = V_{DRM}$ $T_j=125^{\circ}C$		0.2	-	V
latching current	I_L	$V_D = 12V$ $I_{GT}=0.1A$ $T_j=25^{\circ}C$	I-III-IV	-	30	mA
			II	-	40	
Holding current	I_H		I-II-III-IV	-	25	mA
Critical-rate of rise of commutation voltage	dV_D/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}C$		20	-	V/us

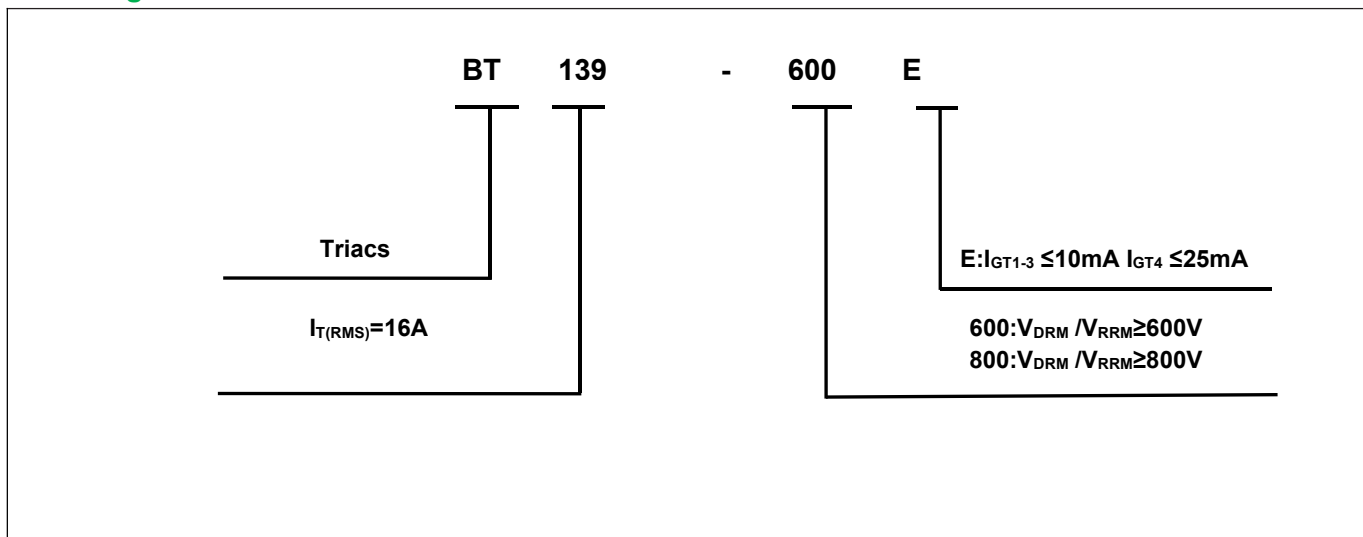
STATIC CHARACTERISTICS

Forward "on" voltage	V_{TM}	I _{TM} =20A tp=380us		-	1.55	V
Repetitive Peak Off-State Current	I_{DRM}	V _D =V _{DRM} V _R =V _{RRM}	T _j =25°C	-	5	UA
Repetitive Peak Reverse Current	I_{RRM}		T _j =125°C	-	1	mA

THERMAL RESISTANCES

Thermal resistance	$R_{th(j-c)}$	Junction to case(AC)	TYP.	1.2	°C/W
	$R_{th(j-a)}$	Junction to ambient	TYP.	60	°C/W

Ordering Information



Typical Characteristics

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

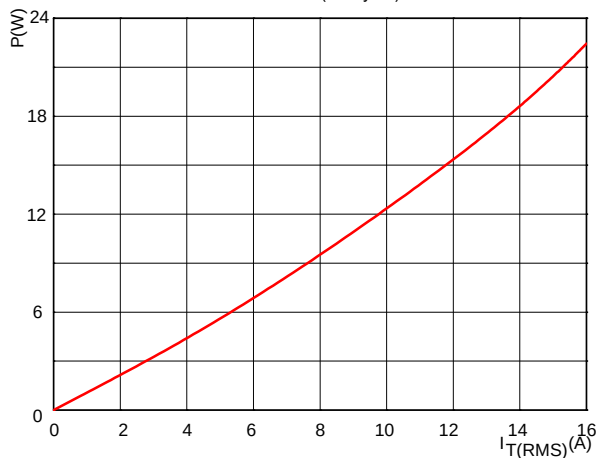


FIG.2: RMS on-state current versus case temperature (full cycle)

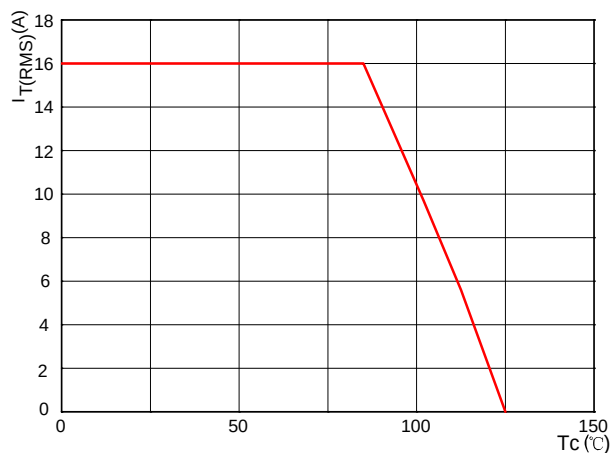


FIG.3: Surge peak on-state current versus number of cycles

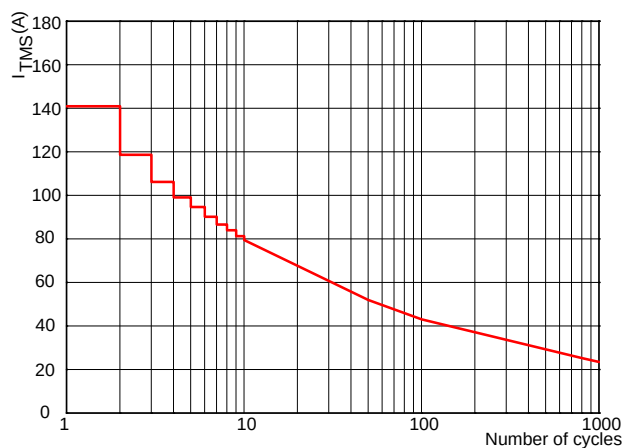
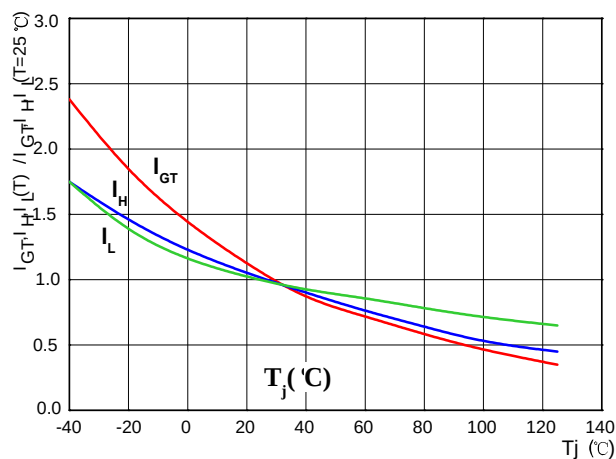
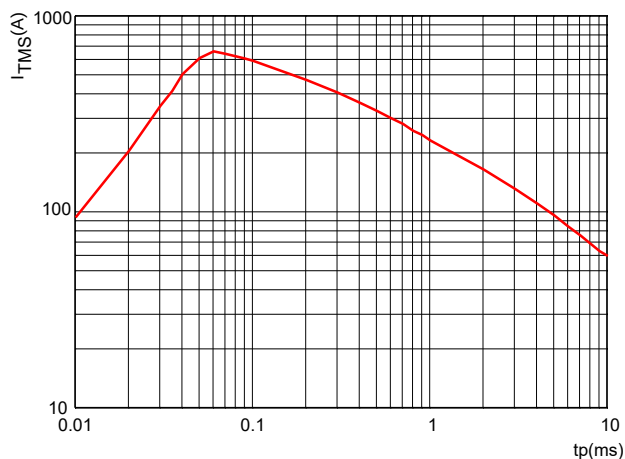
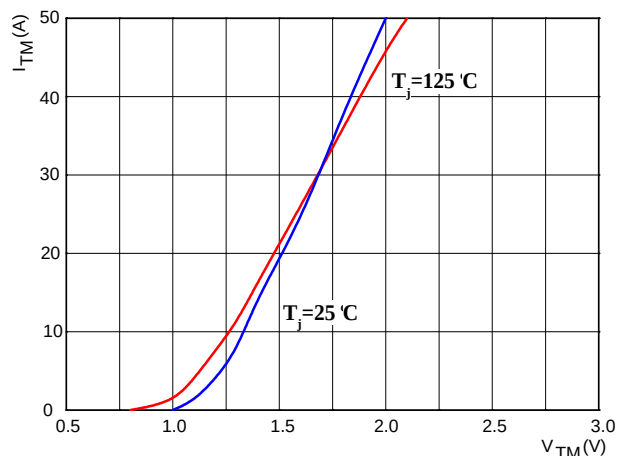
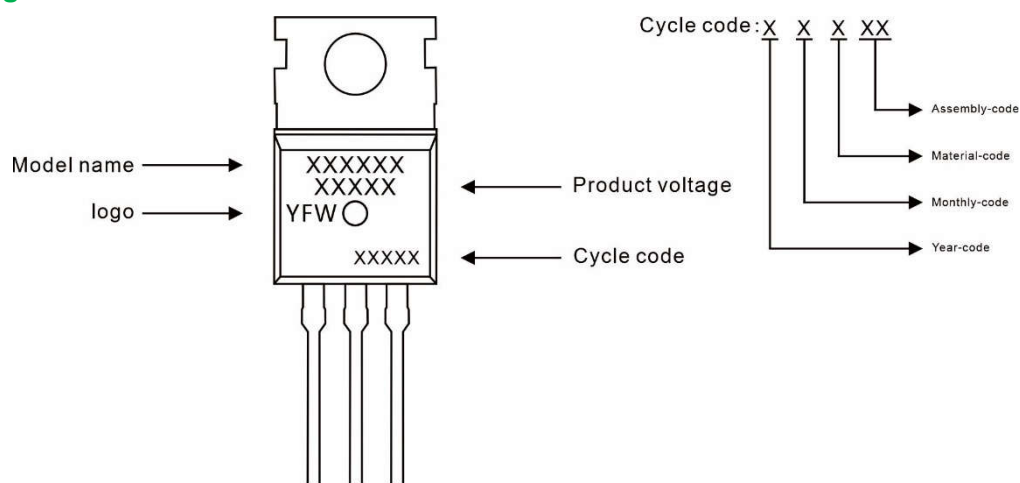


FIG.4: On-state characteristics (maximum values)



Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
BT139	TO-220C	0.07oz(1.96g)	50pcs/tube	1000PCS/Box 5000PCS/Carton

Package Dimensions

TO-220C

Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	9.70	10.40	0.382	0.409
B	6.13	6.82	0.241	0.269
C	9.00	9.40	3.54	0.37
D	0.70	0.92	0.0276	0.0362
D1	1.18	1.45	0.047	0.057
D2	1.22	1.32	0.048	0.052
E	2.34	2.74	0.092	0.108
L	15.70	16.14	0.62	0.64
L1	9.60	10.60	0.38	0.42
L2	12.60	13.60	0.50	0.54
K	2.20	2.75	0.087	0.108
T	4.30	4.71	0.169	0.185
T1	1.20	1.42	0.0472	0.056
T2	0.38	0.65	0.015	0.026
ΦR	3.55	3.78	0.14	0.15

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