

25A Standard SCRs

Product Summary

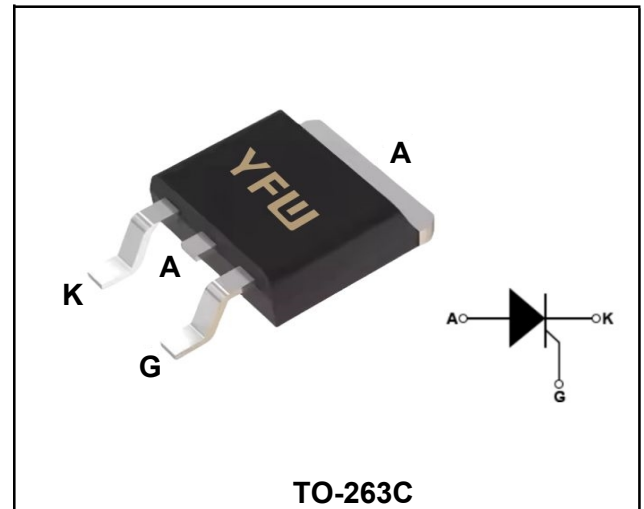
Symbol	Value	Unit
$I_{T(RMS)}$	25	A
$V_{DRM} V_{RRM}$	800	V
V_{TM}	1.5	V

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}	800	V
Repetitive peak reverse voltage	V_{RRM}	800	V
Average on-state current	$I_{T(AV)}$	16	A
RMS on-state current($T_c \leq 80^\circ\text{C}$)	$I_{T(RMS)}$	25	A
Non repetitive surge peak on-state current(full cycle , $t_p=20\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	160	A
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	128	A^2S
Critical rate of rise of on-state current ($T_j=125^\circ\text{C}$)	di_T/dt	50	$\text{A}/\mu\text{s}$
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Junction Temperature	T_J	-40~+125	$^\circ\text{C}$
Storage Temperature	T_{STG}	-40 ~+150	$^\circ\text{C}$

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

Parameter	Symbol	Test Condition	Value			Unit
			min	typ	max	
Gate trigger current	I _{GT}	V _D =12V, R _L =100Ω	-	-	20	mA
Gate trigger voltage	V _{GT}		-	-	1.5	V
Non-triggering gate voltage	V _{GD}	V _D =V _{DRM} , R _L =100Ω, T _J =125°C	0.2	-	-	V
Latching current	I _L	I _G =1.2I _{GT}	-	-	60	mA
			-	-	100	
Holding current	I _H	I _T =500mA	-	-	30	mA
Critical-rate of rise of commutation voltage	dV _D /dt	V _D =2/3 V _{DRM} T _J =125°C	500	-	-	V/μs

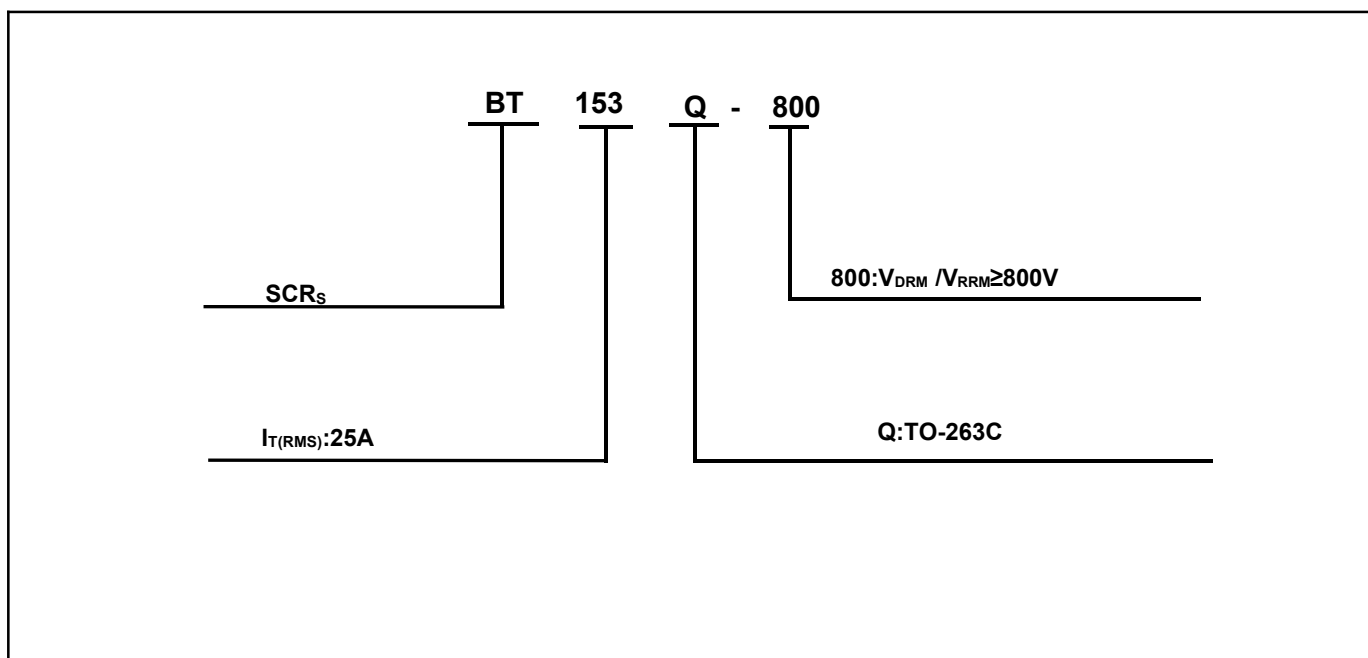
STATIC CHARACTERISTICS

On-state Voltage	V _{TM}	I _{TM} =32A	T _J =25°C	-	-	1.5	V
Repetitive Peak Off-State Current	I _{DRM}	V _D =V _{DRM} = V _{RRM}	T _J =25°C	-	-	5	μA
Repetitive Peak Reverse Current	I _{RRM}		T _J =125°C	-	-	1	mA

THERMAL RESISTANCES

Thermal resistance	R _{th (j-c)}	Junction to case	TYP.	2.05	°C/W
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Ordering Information



Typical Characteristics

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

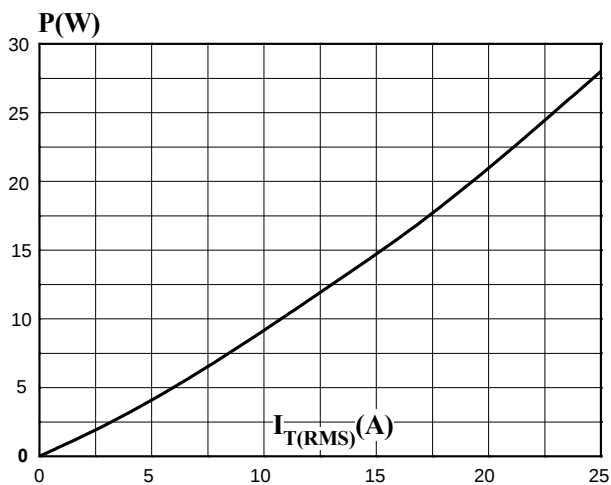


FIG.2: RMS on-state current versus case temperature (full cycle)

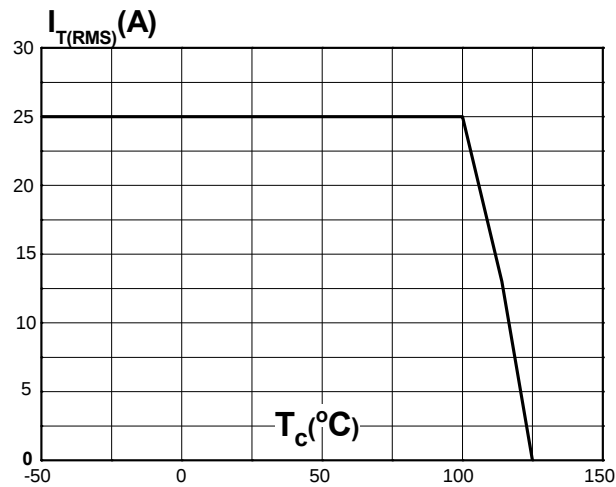


FIG.3: Surge peak on-state current versus number of cycles

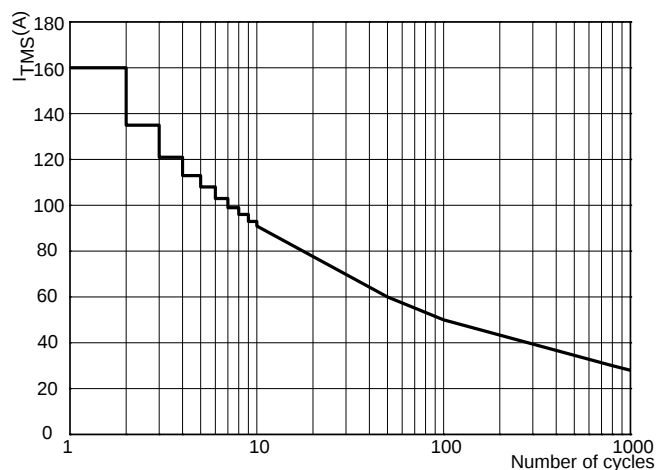


FIG.4: On-state characteristics (maximum values)

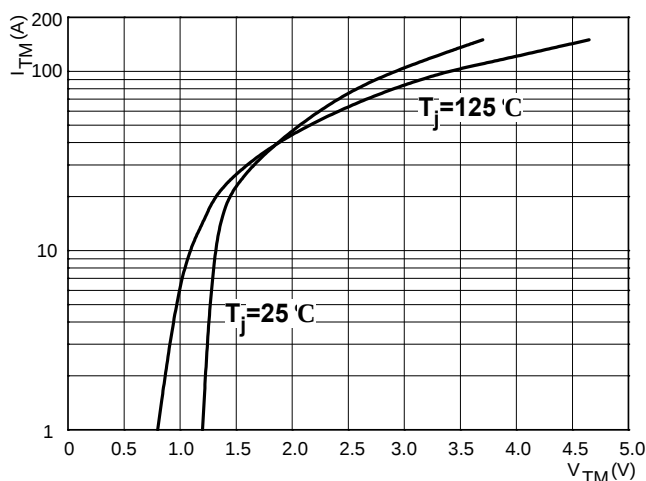


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$

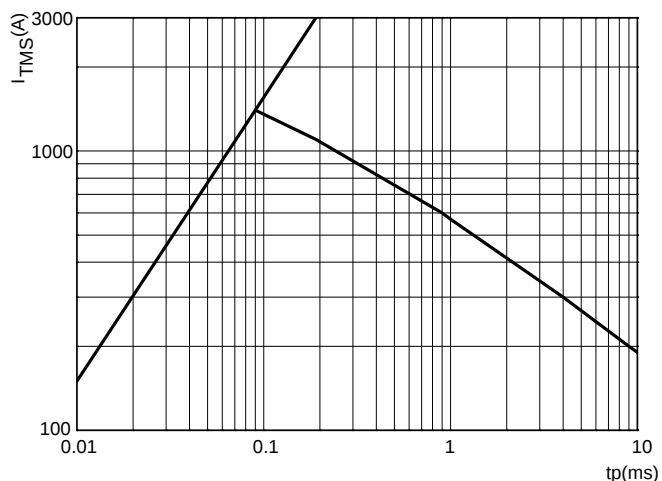
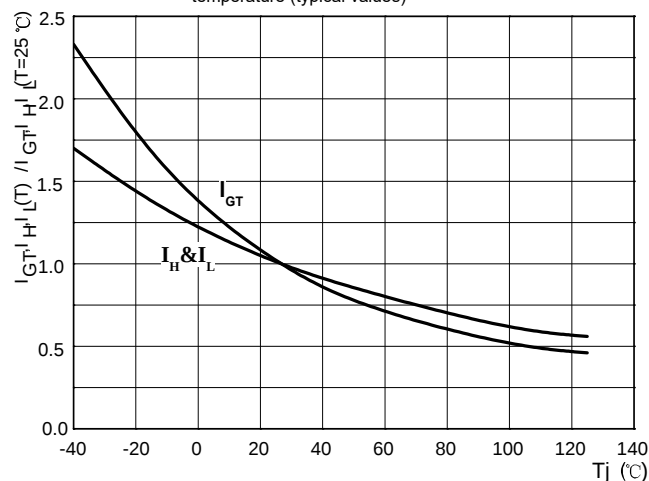
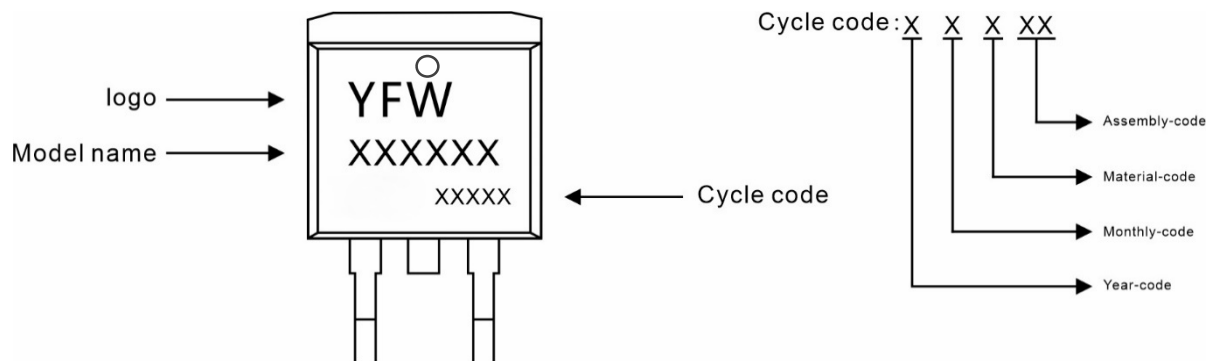


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
BT153Q	TO-263C	0.04oz(1.16g)	800pcs/reel	1600pcs/box 8000pcs/Carton

Package Dimensions

TO-263C

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.30	4.70	0.169	0.185
A1	0.00	0.15	0.000	0.006
A2	4.30	4.55	0.169	0.179
B	1.10	1.50	0.043	0.059
b	0.70	0.90	0.028	0.035
b1	1.20	1.50	0.047	0.059
c	0.30	0.60	0.012	0.024
c1	1.17	1.37	0.046	0.054
D	9.90	10.20	0.390	0.402
E	8.50	8.90	0.335	0.350
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
L	15.00	15.30	0.591	0.602
L1	5.20	5.40	0.205	0.213
L2	2.40	2.60	0.094	0.102
L3	1.60	1.80	0.063	0.071

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