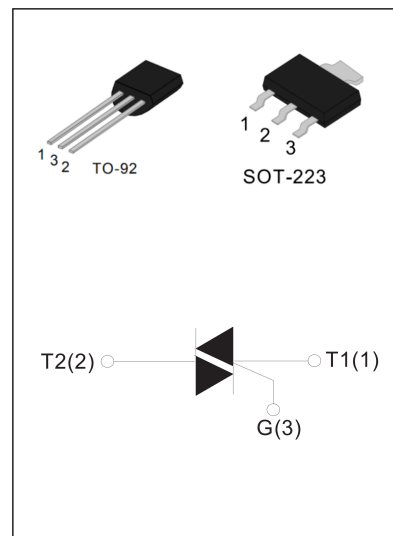


MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	1	A
V_{DRM} V_{RRM}	800	V
V_{TM}	1.55	V



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40 ~ 150	°C
Operating junction temperature range	T_j	-40 ~ 125	°C
Repetitive peak off-state voltage (T=25°C)	V_{DRM}	800	V
Repetitive peak reverse voltage (T=25°C)	V_{RRM}	800	V
Non repetitive surge peak Off-state voltage	V_{DSM}	$V_{DRM} + 100$	V
Non repetitive peak reverse voltage	V_{RSM}	$V_{RRM} + 100$	V
TO-92 $T_c = 50^\circ\text{C}$ SOT-223 $T_c = 65^\circ\text{C}$	$I_{T(RMS)}$	1	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	12.5	A
I^2t value for fusing (tp=10ms)	I^2t	0.78	A ² S
Critical rate of rise of on-state current (I=2×IGT)	dI/dt	20	A/μS
Peak gate current	I_{GM}	1	A
Average gate power dissipation	$P_{G(AV)}$	0.1	W

ELECTRICAL CHARACTERISTICS (T=25°C unless otherwise specified)

3 Quadrants

Symbol	Test Condition	Quadrant		Value		Unit
				SW	TW	
I_{GT}	$V = 12V$ $R = 33\Omega$	I II III	MAX.	5	10	mA
V_{GT}		I II III	MAX.	1.3	1.3	V
V_{GD}	$V_D = V_{DRM}$ $T_j = 125^\circ C$ $R = 3.3K\Omega$	I II III	MIN.	0.2	0.2	V
I_L	$I_G = 1.2I_{GT}$	I II III	MAX.	15	30	mA
I_H	$I_T = 100mA$		MAX.	10	25	mA
dV/dt	$V_D = 2/3V_{DRM}$ Gate Open $T_j = 125^\circ C$		MIN.	20	50	V/ μs
(dV/dt) _c	Without snubber $T_j = 125^\circ C$		MIN.	-	-	V/ μs

4 Quadrants

Symbol	Test Condition	Quadrant		Value		Unit
				D	E	
I_{GT}	$V = 12V$ $R = 33\Omega$	I II III	MAX.	5	10	mA
		IV		10	25	
V_{GT}		I II III IV	MAX.	1.3	1.3	V
V_{GD}	$V_D = V_{DRM}$ $T_j = 125^\circ C$ $R = 3.3K\Omega$	I II III IV	MIN.	0.2	0.2	V
I_L	$I_G = 1.2I_{GT}$	I III IV	MAX.	15	20	mA
		II		20	25	
I_H	$I_T = 100mA$		MAX.	10	15	mA
dV/dt	$V_D = 2/3V_{DRM}$ Gate Open $T_j = 125^\circ C$		MIN.	20	50	V/ μs
(dV/dt) _c	Without snubber $T_j = 125^\circ C$		MIN.	-	-	V/ μs

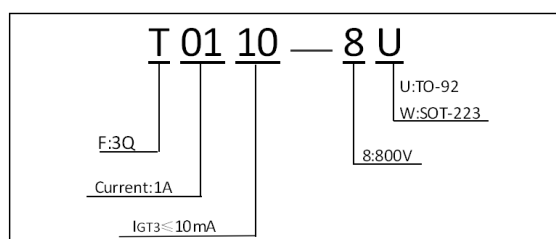
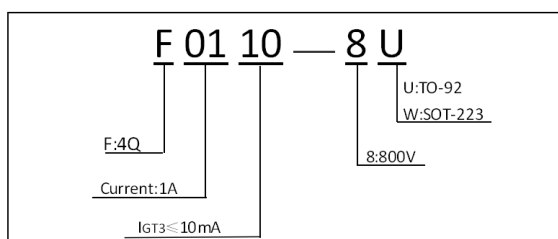
STATIC CHARACTERISTICS

Symbol	Parameter		Value	Unit
V_{TM}	$I_{TM} = 1.4A$ $t_p = 380\mu s$	$T_j = 25^\circ C$	1.55	V
I_{DRM}	$V_D = V_{DRM}$ $V_R = V_{RRM}$	$T_j = 25^\circ C$	5	μA
I_{RRM}		$T_j = 125^\circ C$	0.5	mA

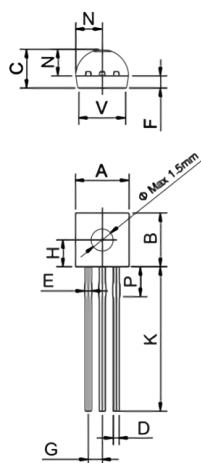
Thermal Resistances

Symbol	Parameter		Value	Unit
Rth(j-a)	junction to ambient	SOT-223	60	°C/W
		TO-92	150	
Rth(j-c)	Junction to tab (AC)	SOT-223	25	
	Junction to lead (AC)	TO-92	60	

Ordering Information Scheme



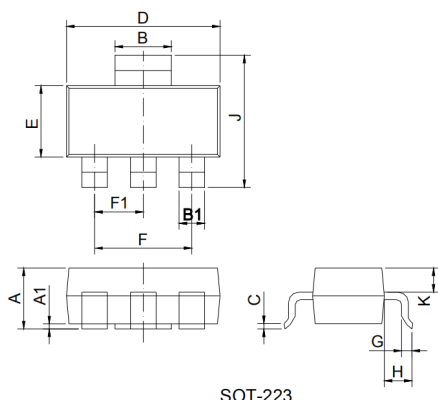
Package Mechanical Data



TO-92

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.45		5.20	0.175		0.205
B	4.32		5.33	0.170		0.210
C	3.18		4.19	0.125		0.165
D	0.254		0.506	0.016		0.021
E	0.30		0.70	0.024		0.031
F	-	1.30	-	-	0.051	-
G	-	1.27	-	-	0.050	-
H	-	2.30	-	-	0.091	-
J	0.30		0.50	0.011		0.020
K	12.70		15.0	0.500		0.591
N	2.04		2.66	0.080		0.105
P	1.86		2.06	0.073		0.081
V	-		4.50	-		0.169

Package Mechanical Data



SOT-223

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	1.6	1.8	0.059	0.063	0.071
A1	0.01	0.06	0.10	0.001	0.002	0.004
B	2.9	3.0	3.1	0.114	0.118	0.122
B1	0.6	0.7	0.8	0.024	0.028	0.031
C	0.22	0.26	0.32	0.009	0.010	0.013
D	6.3	6.5	6.7	0.248	0.256	0.264
E	3.3	3.5	3.7	0.130	0.138	0.146
F		4.6			0.181	
F1		2.3			0.091	
G	0.7	0.9	1.1	0.028	0.035	0.043
H	1.5	1.75	2	0.059	0.069	0.079
J	6.7	7.0	7.3	0.264	0.276	0.287
K		0.9			0.035	

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

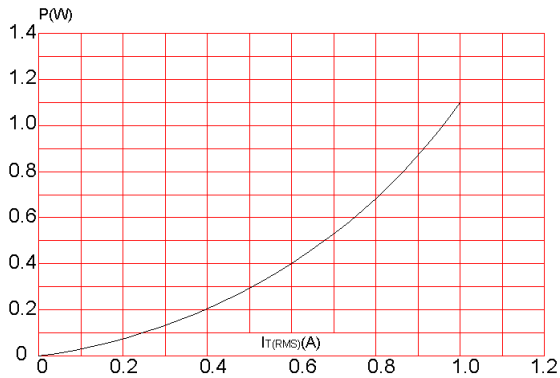


FIG.2:RMS on-state current versus mounting base temperature(full cycle)

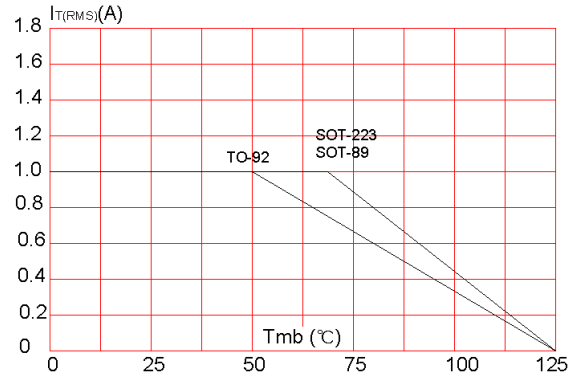


FIG.3:On-state characteristics (maximum values).

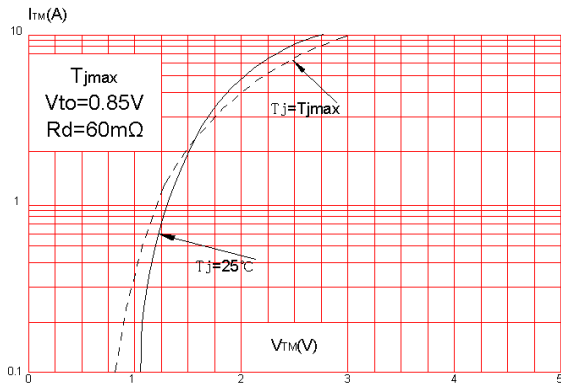


FIG.4:Surge peak on-state current versus number of cycles.

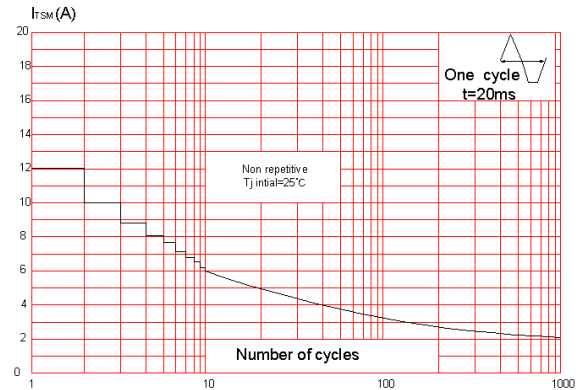


FIG.5:Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t .

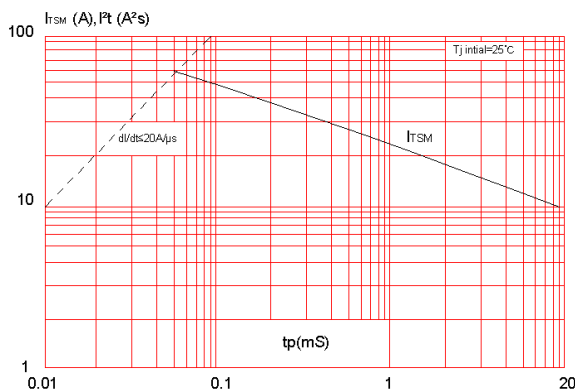


FIG.6:Relative variations of gate trigger current,holding current and latching current versus junction temperature(typical values)

