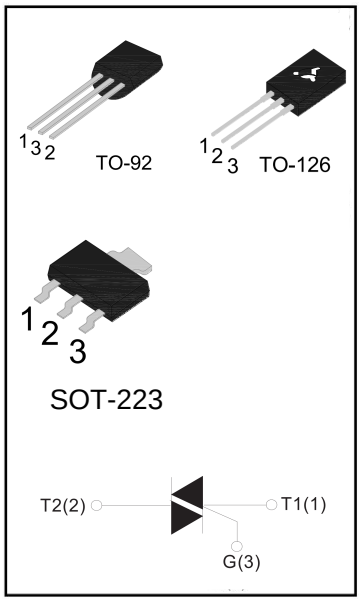
F0205 Series 2A TRIAC

Rev:1.0

MAIN FEATURES

Symbol	Value	Unit
IT(RMS)	2	A
VDRM/VRRM	800	V
IGT3	5	mA



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		Tstg	-40 -150	℃
Operating junction temperature range		Tj	-40-125	℃
Repetitive peak off-state voltage (T =25℃)		V_{DRM}	800	V
Repetitive peak reverse voltage (T =25℃)		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
RMS on-state current	TO-92(Tc = 50°C) TO-126(Tc = 73°C) SOT-223(Tc = 73°C)	$I_{T(RMS)}$	2	A
Non repetitive surge peak on-sate current （full cycle，F=50HZ）		ITSM	20	A
I²t balue for fusing (tp=10ms)		I²t	0.72	A²s
Critical rate of rise of on-sate current （I_G=2xI_{GT}）		dI/dt	20	A/μs

Peak gate current	I_{GM}	2	A
Average gate power dissipation	$P_{G(AV)}$	0.5	W
Peak gate power	P_{GM}	5	W

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Quadrant		Value	Unit
I_{GT}	V_D=12V R_L=33Ω	Ⅰ-Ⅱ-Ⅲ	MAX	5	mA
		Ⅳ		10	
V_{GT}		ALL	MAX	1.3	V
V_{GD}	V_D=V_{DRM} T_j=125℃ R_L=3.3KΩ	ALL	MIN	0.2	V
I_L	I_G=1.2I_{GT}	Ⅰ-Ⅲ	MAX	5	mA
		Ⅱ-Ⅳ		10	
I_H	I_T=200mA		MAX	5	mA
dV/dt	V_D=2/3V_{DRM} Gate Open T_j=125℃		MIN	15	V/μs

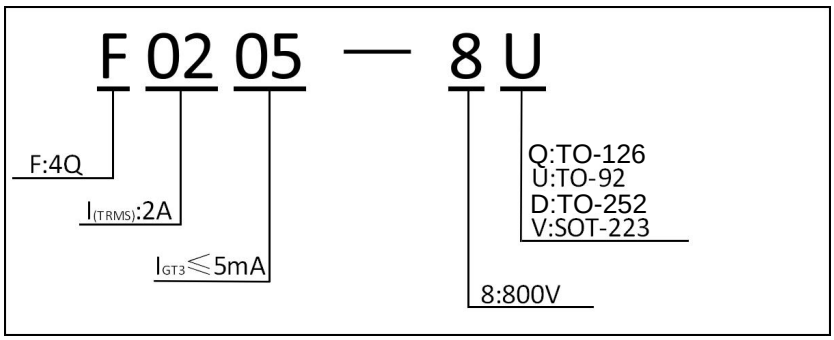
STATIC CHARACTERISTICS

Symbol	Parameter		Value	Unit
V_{TM}	I_{TM}=1.4A tp=380μs	T_j=25℃	1.5	V
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25℃	5	μA
I_{RRM}		T_j=125℃	500	μA

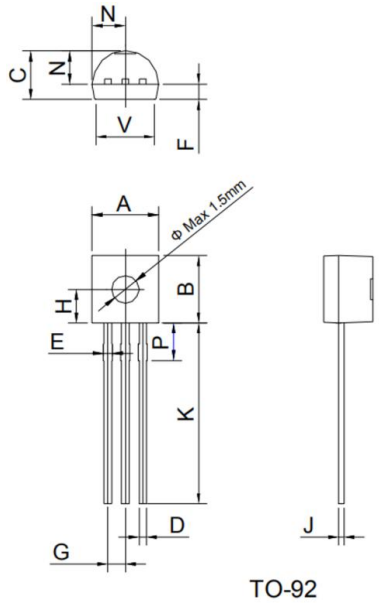
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	Junction to lead (AC)	TO-92/ TO-126	60/20	℃/W
	junction to tab(AC)	SOT-223	20	

ORDERINGINFORMATION

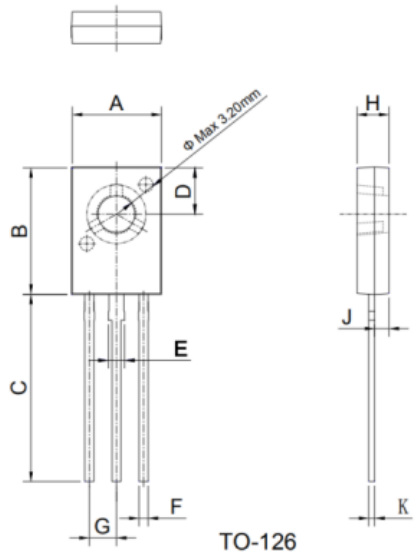


PACKAGEMECHANICALDATA



TO-92

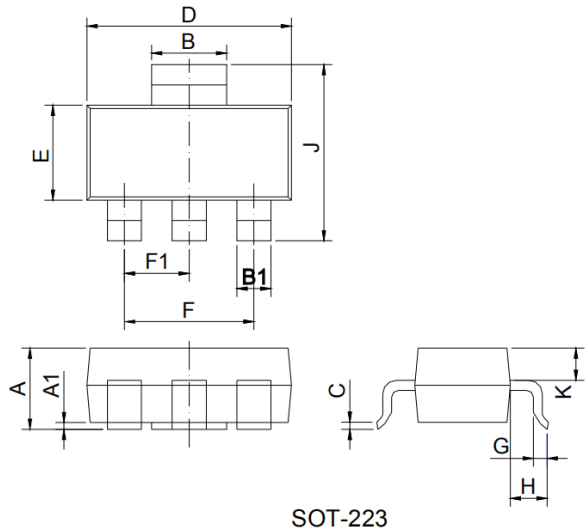
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.45		5.20	0.175		0.205
B	4.32		5.33	0.170		0.210
C	3.18		4.19	0.125		0.165
D	0.254		0.506	0.016		0.021
E	0.30		0.70	0.024		0.031
F	-	1.30	-	-	0.051	-
G	-	1.27	-	-	0.050	-
H	-	2.30	-	-	0.091	-
J	0.30		0.50	0.011		0.020
K	12.70		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



TO-126

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	7.43		8.23	0.292		0.324
B	10.07		11.27	0.396		0.443
C	15.4		17.4	0.606		0.685
D	0.80		4.20	0.149		0.165
E	1.17		1.47	0.046		0.058
F	0.48		0.88	0.018		0.034
G		2.29			0.090	
H	2.50		2.90	0.098		0.114
J	1.10		1.50	0.043		0.059
K	0.45		0.60	0.018		0.024

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	

PACKAGE MECHANICAL DATA

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

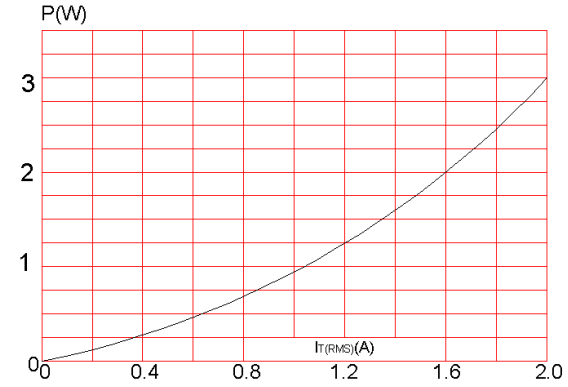


FIG.2:RMS on-state current versus mounting base temperature(full cycle)

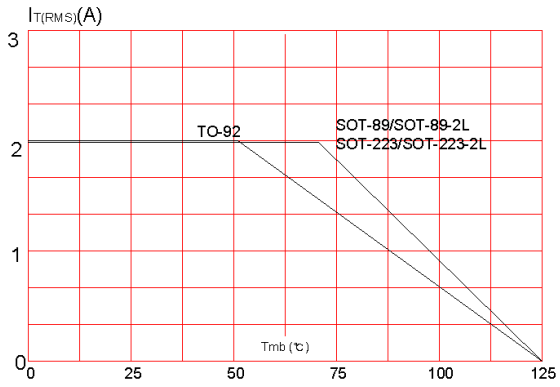


FIG.3:On-state characteristics (maximum values).

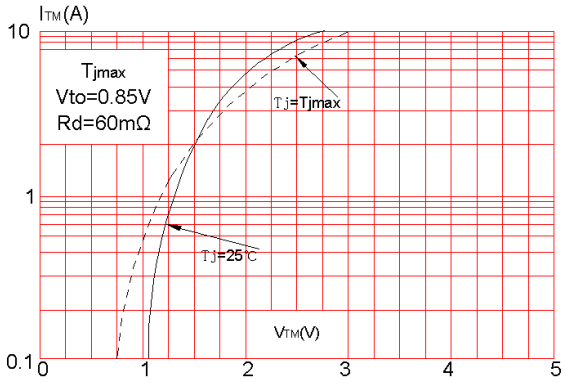


FIG.4:Surge peak on-state current versus number of cycles.

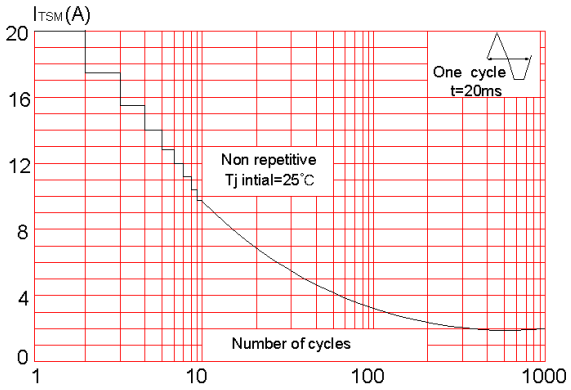


FIG.5:Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms,and corresponding value of I²t.

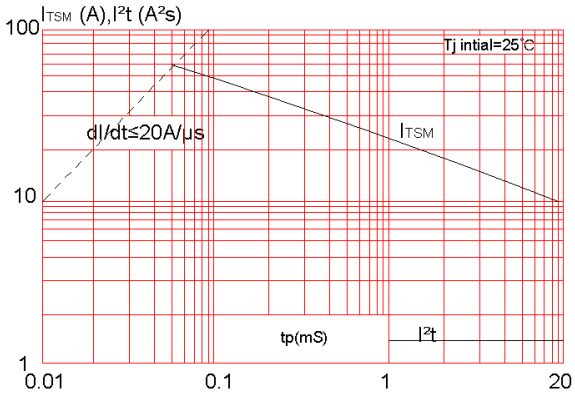


FIG.6:Relative variations of gate trigger current,holding current and latching current versus junction temperature(typical values)