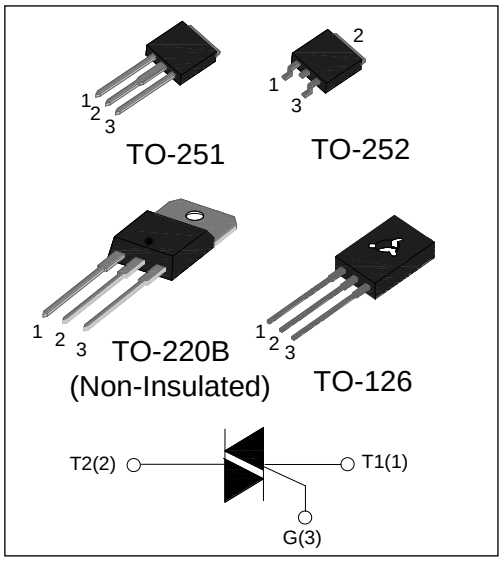
JST134 Series 4A TRIACs

Rev.3.0

DESCRIPTION:

JST134 series triacs with low holding and latching current are especially recommended for use on middle and small resistance type power load.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
V_{DRM}/V_{RRM}	600	V

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40 - 150	℃
Operating junction temperature range		T_j	-40 - 125	℃
Repetitive peak off-state voltage(T_j=25℃)		V_{DRM}	600	V
Repetitive peak reverse voltage(T_j=25℃)		V_{RRM}	600	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-251/ TO-252 (T_C=110℃)	$I_{T(RMS)}$	4	A
	TO-220B(Non-Ins) (T_C=113℃)			
	TO-126 (T_C=107℃)			
Non repetitive surge peak on-state current (full cycle, F=50Hz)		I_{TSM}	25	A
I^2t value for fusing (tp =10ms)		I^2t	3.1	A^2s
Critical rate of rise of on-state current (I_G =2×I_{GT})	Ⅰ-Ⅱ-Ⅲ	dI/dt	50	A/μs
	Ⅳ		10	
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
				D	E	
I_{GT}	V_D=12V R_L=33Ω	Ⅰ-Ⅱ-Ⅲ	MAX	5	10	mA
		Ⅳ		10	25	
V_{GT}		ALL	MAX	1.5		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-Ⅳ	MAX	10	20	mA
		Ⅱ		15	35	
I_H	I_T =100mA		MAX	10	20	mA
dV/dt	V_D =2/3V_{DRM} Gate Open T_j =125℃		MIN	5	50	V/μs
(dV/dt)c	(dI/dt)c =1.1A/ms T_j =125℃		MIN	1	5	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	I_{TM} =5A tp=380μs	T_j =25℃	1.7	V
I_{DRM}	V_D =V_{DRM} V_R =V_{RRM}	T_j =25℃	5	μA
I_{RRM}		T_j =125℃	1	mA

THERMAL RESISTANCES

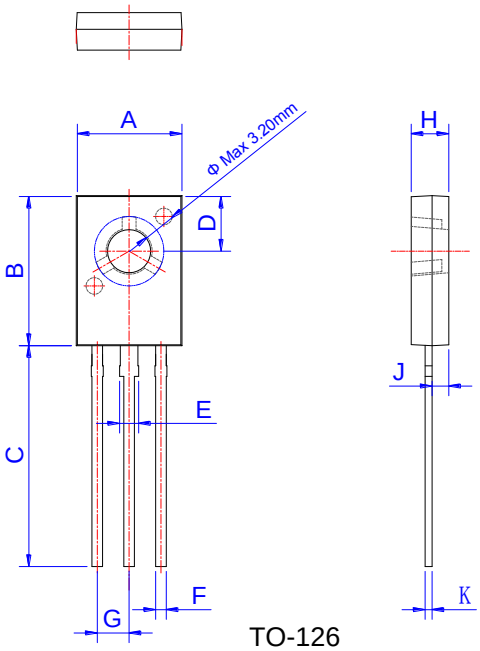
Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-251/TO-252	3.7	℃/W
		TO-220B(Non-Ins)	3.1	
		TO-126	4.1	

ORDERING INFORMATION

J	ST	134	H	-600	D

- J: JieJie Microelectronics Co.,Ltd
- ST: TRIACs
- 134: $I_{T(RMS)}$:4A
- H: Q:TO-126 B:TO-220B(Non-Ins) H:TO-251 K:TO-252
- -600: 600:V_{DRM} /V_{RRM}≥600V
- D: D:I_{GT1-3}≤5mA I_{GT4}≤10mA E:I_{GT1-3}≤10mA I_{GT4}≤25mA

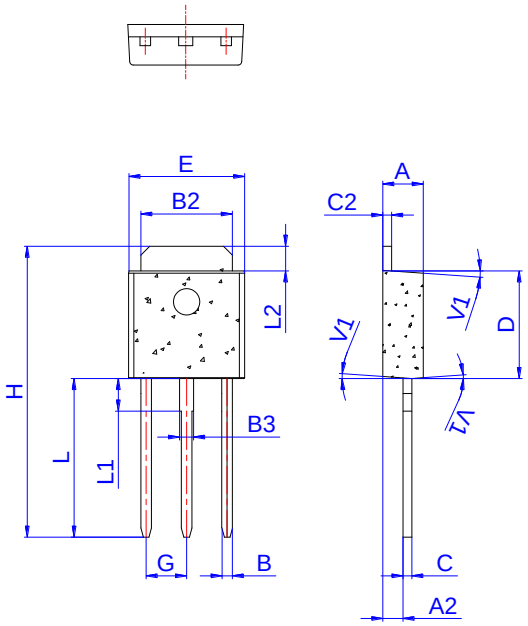
PACKAGE MECHANICAL DATA



TO-126

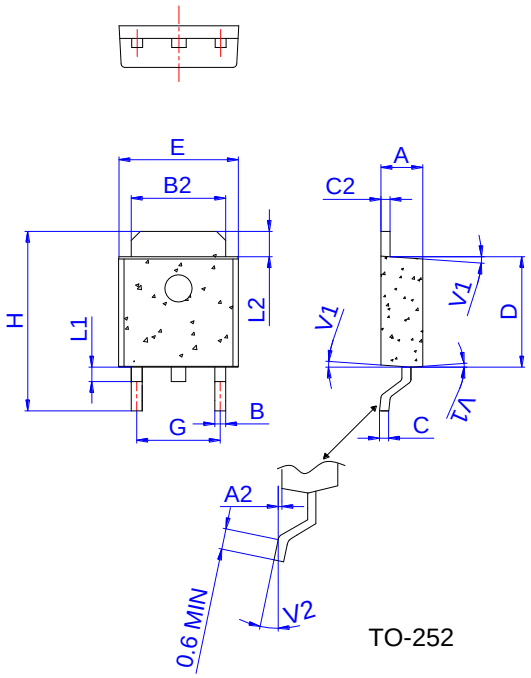
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	7.40		7.80	0.291		0.307
B	10.6		11.2	0.417		0.441
C	15.3		16.3	0.602		0.642
D	3.90		4.10	0.154		0.161
E	1.17		1.47	0.046		0.058
F	0.66		0.86	0.026		0.034
G		2.29			0.090	
H	2.50		2.90	0.098		0.114
J	1.10		1.50	0.043		0.059
K	0.45		0.60	0.018		0.024

PACKAGE MECHANICAL DATA



TO-251

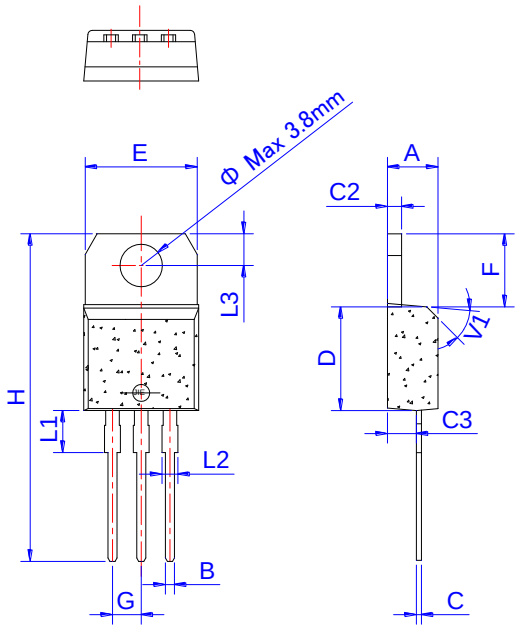
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.90		1.20	0.035		0.047
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
B3	0.76		0.85	0.030		0.033
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G		2.30			0.091	
H	16.0		17.0	0.630		0.669
L	8.90		9.40	0.350		0.370
L1	1.80		1.90	0.071		0.075
L2	1.37		1.50	0.054		0.059
V1		4°			4°	



TO-252

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.03		0.23	0.001		0.009
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G	4.40		4.70	0.173		0.185
H	9.35		10.6	0.368		0.417
L1	1.30		1.70	0.051		0.067
L2	1.37		1.50	0.054		0.059
V1		4°			4°	
V2	0°		8°	0°		8°

PACKAGE MECHANICAL DATA



TO-220B Non-Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

FIG.1: Maximum power dissipation versus RMS on-state current

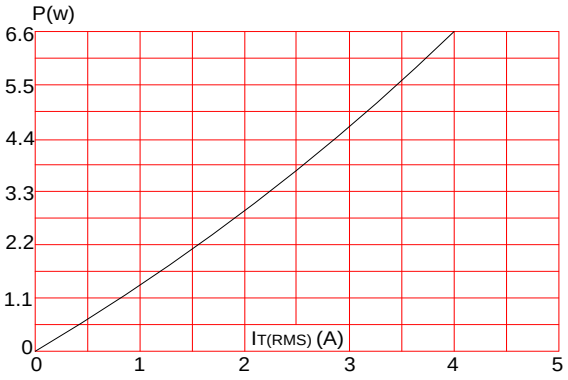


FIG.2: RMS on-state current versus case temperature

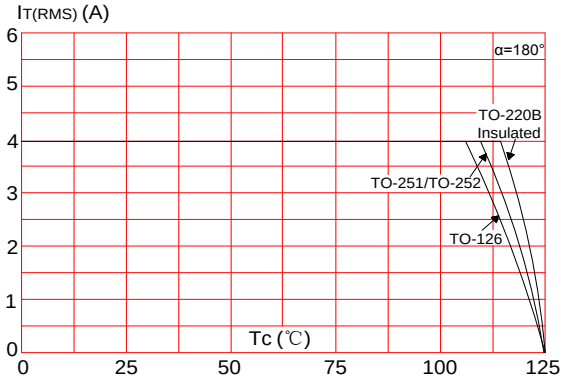


FIG.3: Surge peak on-state current versus number of cycles

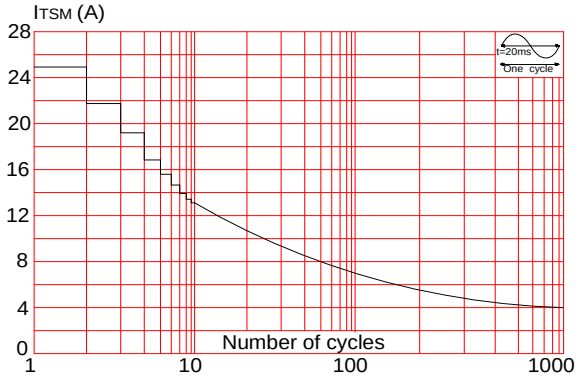


FIG.4: On-state characteristics (maximum values)

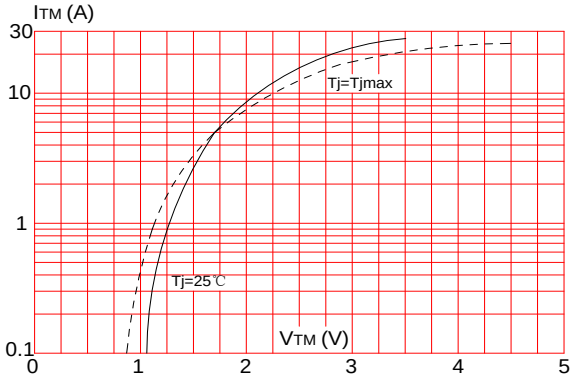


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms and corresponding value of I^2t (Ⅰ-Ⅱ-Ⅲ:dI/dt < 50A/μs; Ⅳ:dI/dt < 10A/μs)

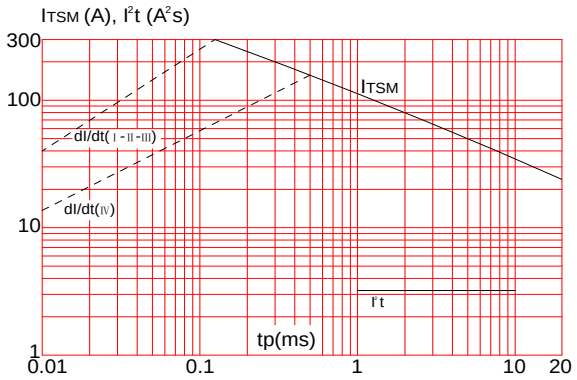


FIG.6: Relative variations of gate trigger current versus junction temperature

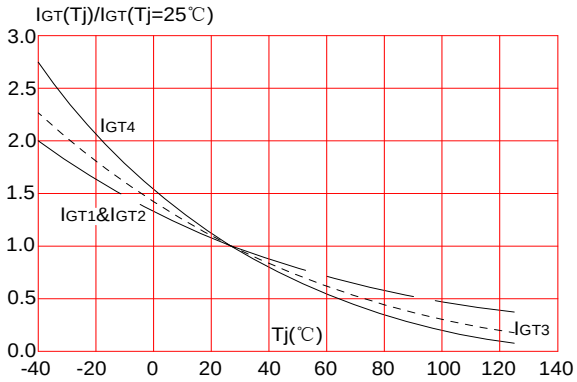


FIG.7: Relative variations of holding current versus junction temperature

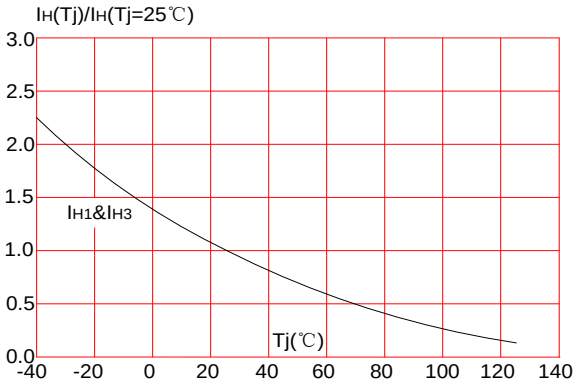


FIG.8: Relative variations of latching current versus junction temperature