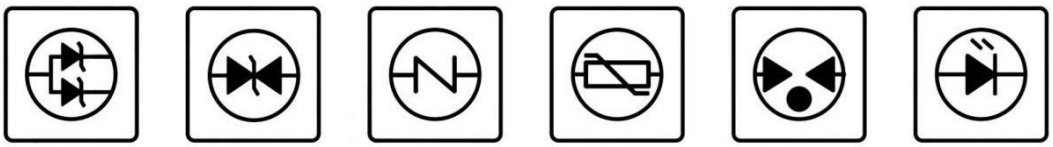
MSKSEMI 美森科
SEMICONDUCTOR



BT151S-500R-MS

Product specification

FEATURES

- Glass-passivated mesa chip for reliability and uniform
- High current output up to 12A

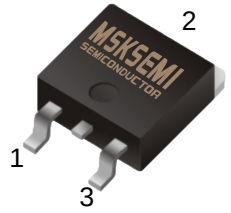
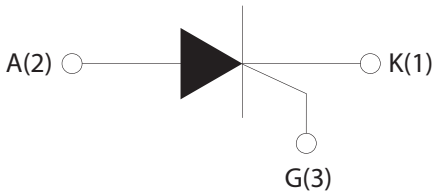
APPLICATIONS

- Motor cycle
- Power charger
- T-tools etc

APPROVALS

- RoHS：Compliance with
- HF：Compliance with

Reference News

TO-252	Schematic Symbol	MARKING
		MSKSEMI BT151S-500R MS***

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage (T_j=25℃)	V_{DRM}	600	V
Repetitive peak reverse voltage (T_j=25℃)	V_{RRM}	600	
RMS on-state current (T =110℃)	$I_{T(RMS)}$	12	A
Non repetitive surge peak on-state current (tp=10ms)	I_{TSM}	140	
I^2t value for fusing (tp=10ms)	I2t	98	A2S
Critical rate of rise of on-state current (I_G=2*I_{GT})	d_i/d_t	50	A/μs
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Storage junction temperature range	T_{STG}	-40~+150	℃
Operating junction temperature range	T_j	-40~+125	

ELECTRICAL CHARACTERISTICS (T_j=25°C)

Symbol	Test Condition	Value	Unit
I_{GT}	V_D=12V,R_L=33Ω	≤15	mA
V_{GT}		≤1.5	V
V_{GD}	V_D=V_{DRM},R_L=3.3KΩ,T_j=150℃	≥0.2	
I_H	I_T=500mA	≤50	mA
I_L	I_G=1.2I_{GT}	≤60	
dV_D/dt	V_D=2/3,V_{DRM}Gate Open,T_j=150℃	≥200	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value	Unit
V_{TM}	I_{TM}=24A,tp=380μs	T_j=25℃	≤1.55	V
I_{DRM}	V_D=V_{DRM} , V_R=V_{RRM}		≤5	uA
I_{RRM}		T_j=150℃	≤2	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case(AC)	1.8	℃/W
$R_{th(j-a)}$	Junction to ambient	70	℃/W

PARAMETER CHARACTERISTIC CURVE

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

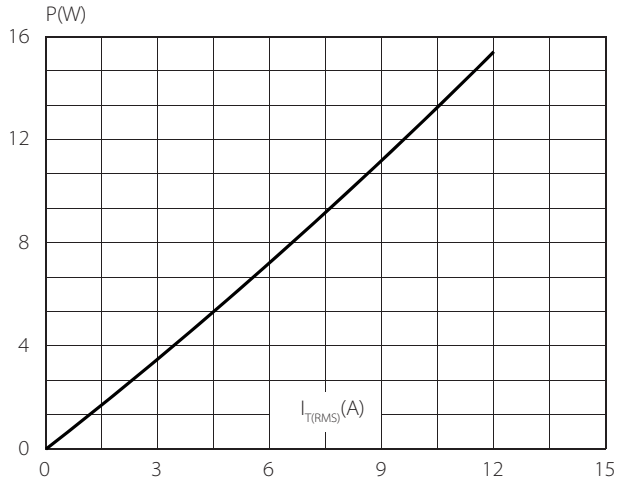


FIG.2: RMS on-state current versus ambient temperature (printed circuit board FR4,copper thickness:35μm)(full cycle)

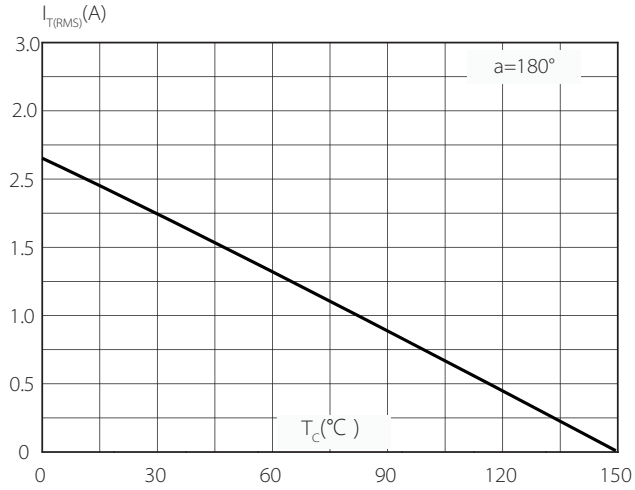


FIG.3: Surge peak on-state current versusnumber of cycles

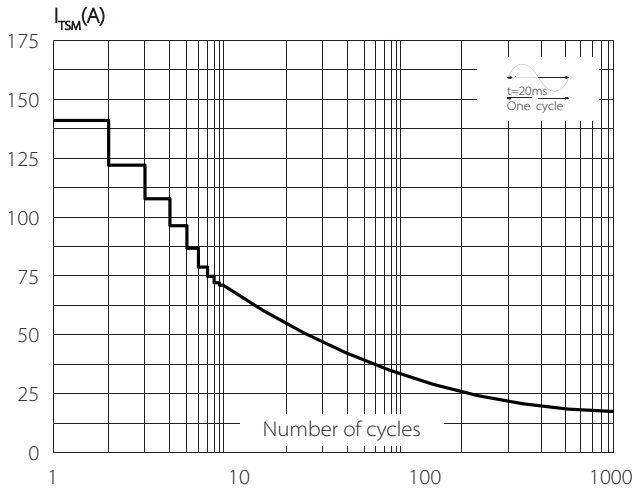


FIG.4 On-state characteristics (maximum values)

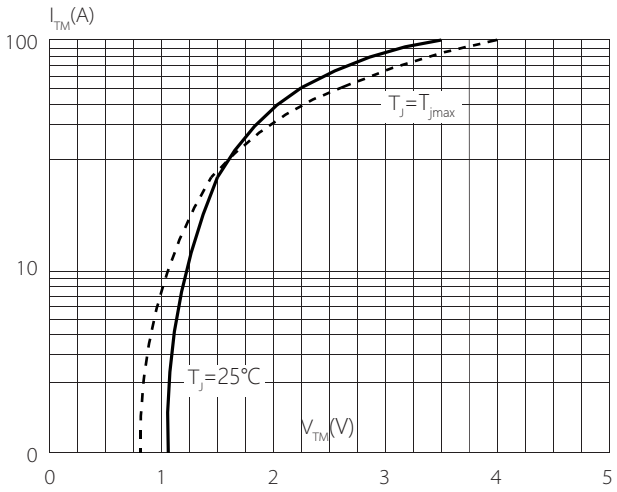


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms and corresponding value of I²t (dI/dt < 50A/μs)

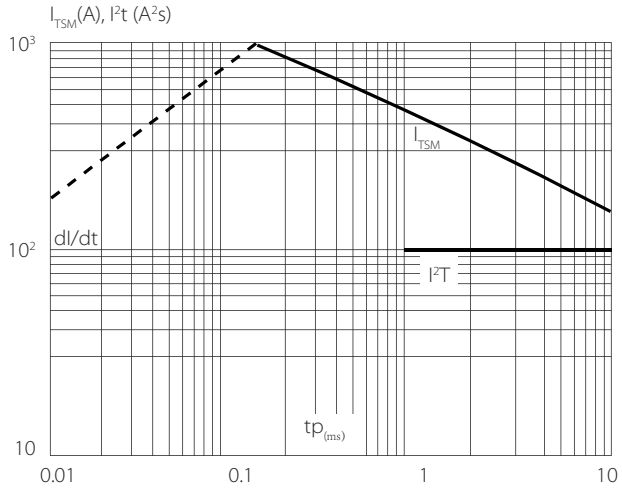


FIG.6 Relative variations of gate triggercurrent, holding current and latching current versus junction temperature

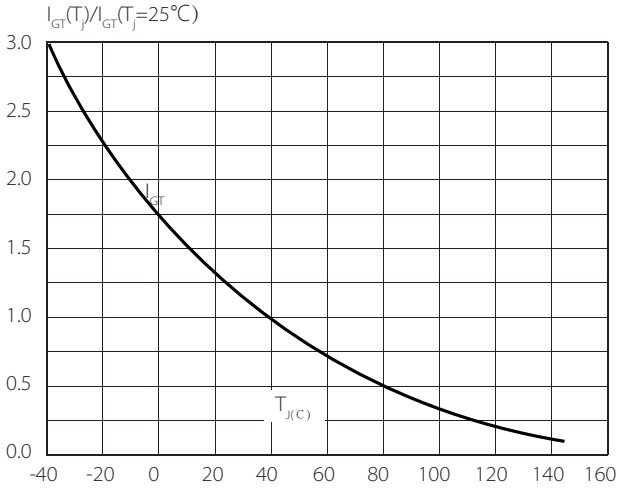


FIG.7 Relative variations of holding current versus junction temperature

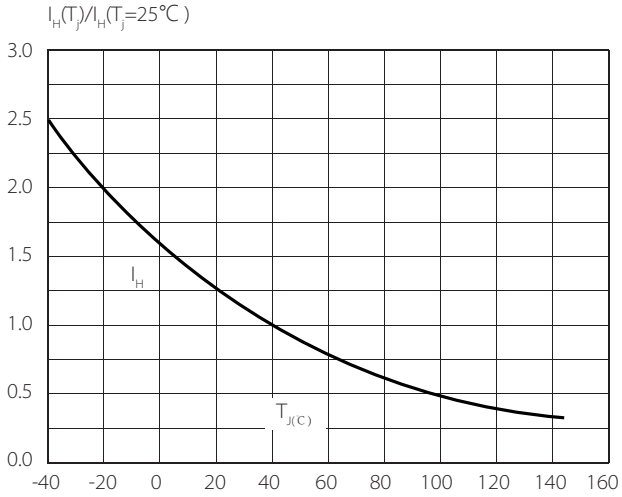
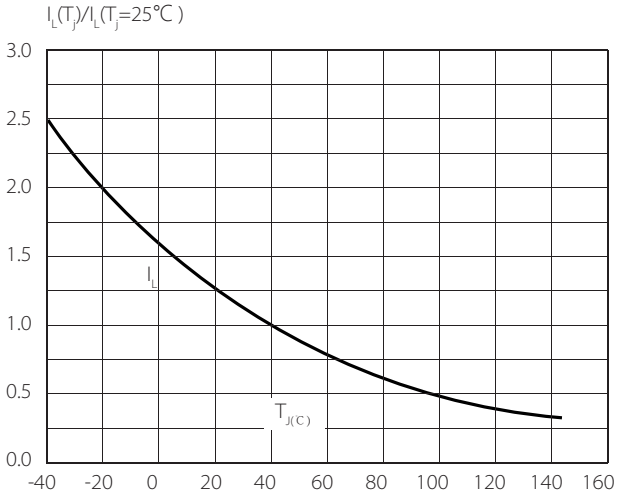
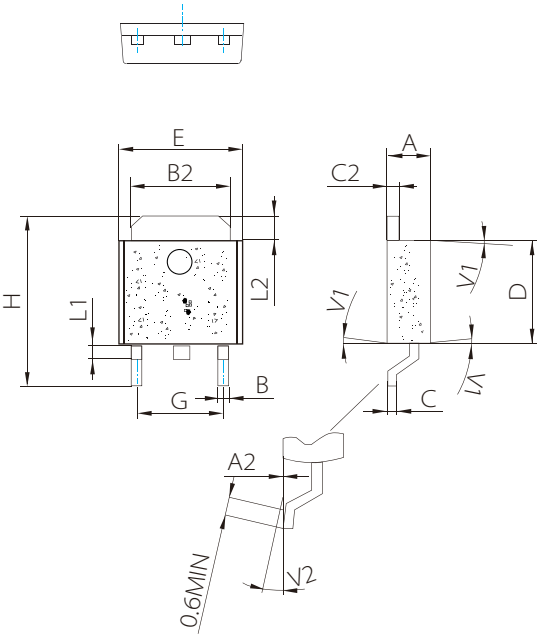


FIG.8 Relative variations of atching current versus junction temperature



PACKAGE MECHANICAL DATA



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	0.1	0.185
H	9.35		10.6	0.368		0.417
L1	1.30		1.70	0.051	0.143	0.067
L2	1.37		1.50	0.054		0.059
L1		4°			0.130	
V2	0°		8°	0°		8°

Order information

P/N	PKG	QTY
BT151S-500R-MS	TO-252	2500PCS

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