MSKSEMI 美森科
SEMICONDUCTOR

ESD TVS TSS MOV GDT PLED

# ST20100L-MS

## Product specification

## FEATURES

- EXTREMELY LOW VF
- LOW STORED CHARGE, MAJORITY CARRIER CONDUCTION
- LOW POWER LOSS / HIGH EFFICIENCY
- UL 94V0 FLAME RETARDANT EPOXY MOLDING COMPOUND
- HALOGEN FREE

## MECHANICAL DATA

- CASE：TRANSFER MOLDED
- LEADS：SOLDERABLE PER MIL-STD-202, METHOD 208
- POLARITY：AS MARKED
- WEIGHT：0.095 GRAMS (APPROXIMATELY)

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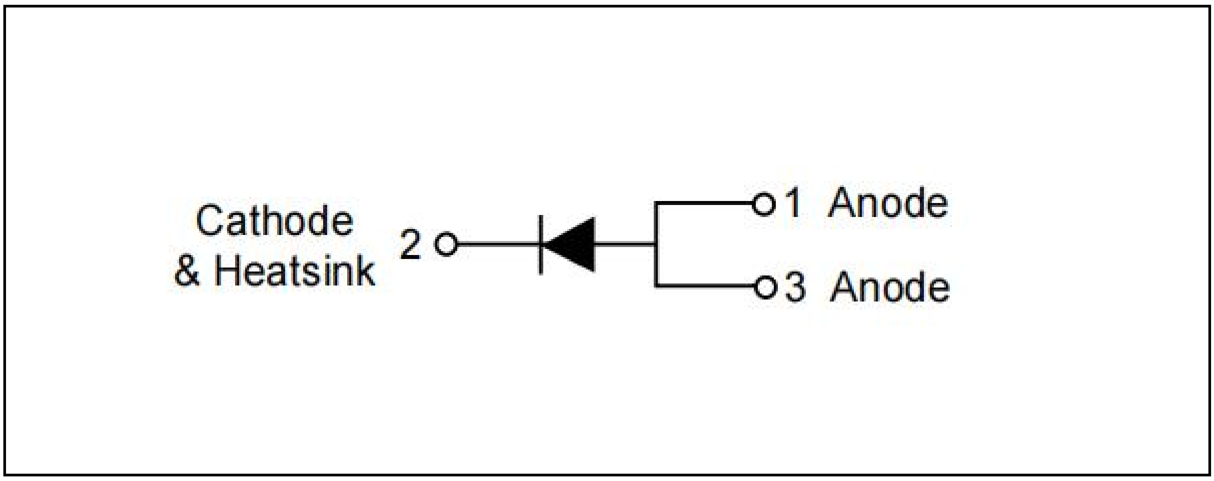
## Reference News

| TO-277 | MARKING INFORMATION |
|---|---|
|  |  |

## PIN CONFIGURATION



# MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

RATINGS AT 25℃ AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED

SINGLE PHASE, HALF WAVE, 60 HZ, RESISTIVE OR INDUCTIVE LOAD.

FOR CAPACITIVE LOAD, DERATE CURRENT BY 20%

| RATINGS | SYMBOL | ST20100L-MS | UNITS |
|---|---|---|---|
| MAXIMUM RECURRENT PEAK REVERSE VOLTAGE | $V_{RRM}$ | 100 | V |
| MAXIMUM RMS VOLTAGE | $V_{RMS}$ | 70 | V |
| MAXIMUM DC BLOCKING VOLTAGE | $V_{DC}$ | 100 | V |
| MAXIMUM AVERAGE FORWARD RECTIFIED CURRENT SEE FIG.1 PER LEG | $I_O$ | 20 | A |
| PEAK FORWARD SURGE CURRENT, 8.3ms SINGLE HALF SINE-WAVE SUPERIMPOSED ON RATED LOAD PER LEG | $I_{FSM}$ | 275 | A |
| STORAGE TEMPERATURE RANGE | $T_{STG}$ | - 65 TO + 150 | ℃ |
| OPERATING JUNCTION TEMPERATURE RANGE | $T_J$ | - 55 TO + 150 | ℃ |

# ELECTRICAL CHARACTERISTICS

| CHARACTERISTICS | SYMBOL | ST20100L-MS | UNITS |
|---|---|---|---|
| MAXIMUM FORWARD VOLTAGE AT $I_F$= 20A $T_J$ =25℃ | VF | **0.70** | V |
| TYPICAL $T_J$ =25 ℃ | | **0.65** | |
| TYPICAL Reverse Recovery Time | | / | |
| TYPICAL FORWARD VOLTAGE AT $I_F$= 1A $T_J$ =125℃ | | 0.30 | |
| TYPICAL FORWARD VOLTAGE AT $I_F$= 5A $T_J$ =125℃ | | 0.45 | |
| MAXIMUM REVERSE CURRENT AT 25℃ PER LEG (NOTE 1) | $I_R$ | 80 | uA |
| MAXIMUM REVERSE CURRENT AT 125℃ PER LEG (NOTE 1) | $I_R$ | 20 | mA |

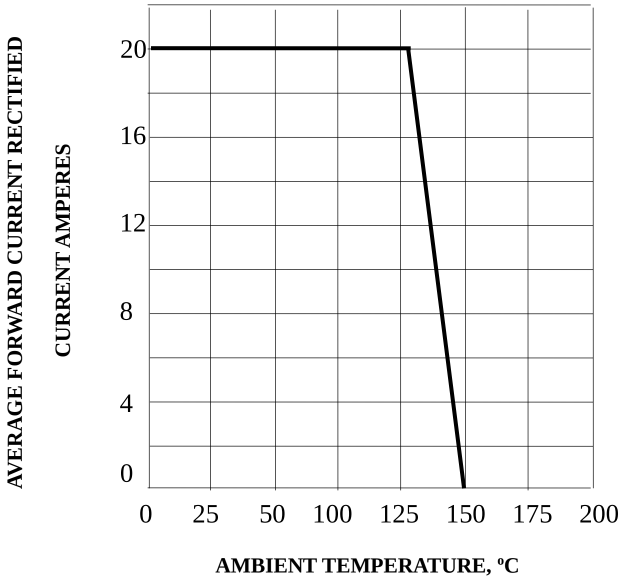
# THERMAL CHARACTERISTICS (Tc=25℃ UNLESS OTHERWISE NOTED )

| PARAMETER | SYMBOL | ST20100L-MS | UNITS |
|---|---|---|---|
| TYPICAL THERMAL RESISTANCE JUNCTION TO CASE PER LEG | $R_{\theta jc}$ | 23 | ℃/W |

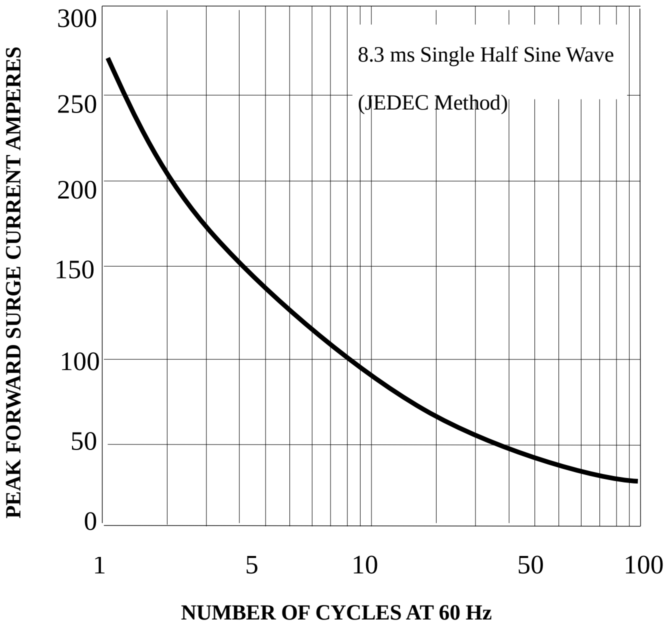
NOTES： 1. PULSE TEST: 300μS PULSE WIDTH, 1% DUTY CYCLE.

# RATINGSAND CHARACTERISTIC CURVES OF SB20100L

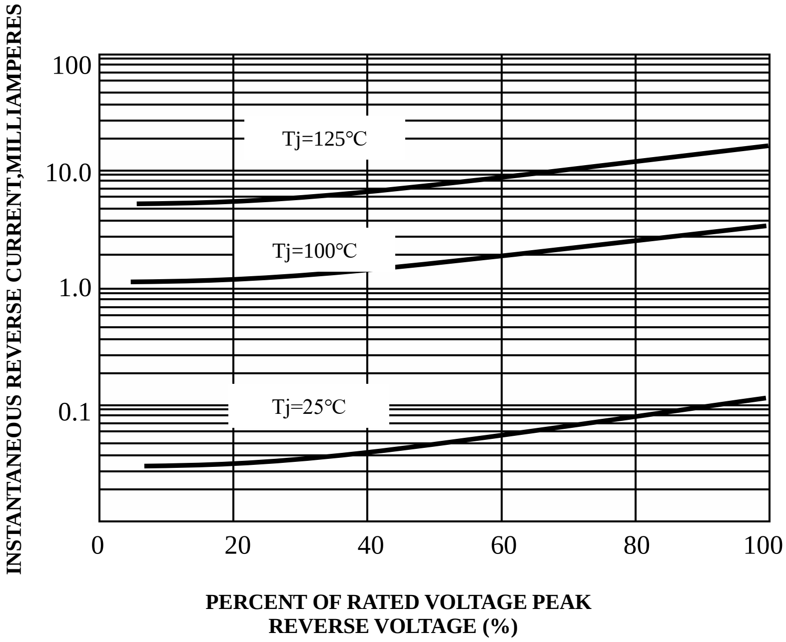
### FIG. 1-FORWARD CURRENT DERATING CURVE



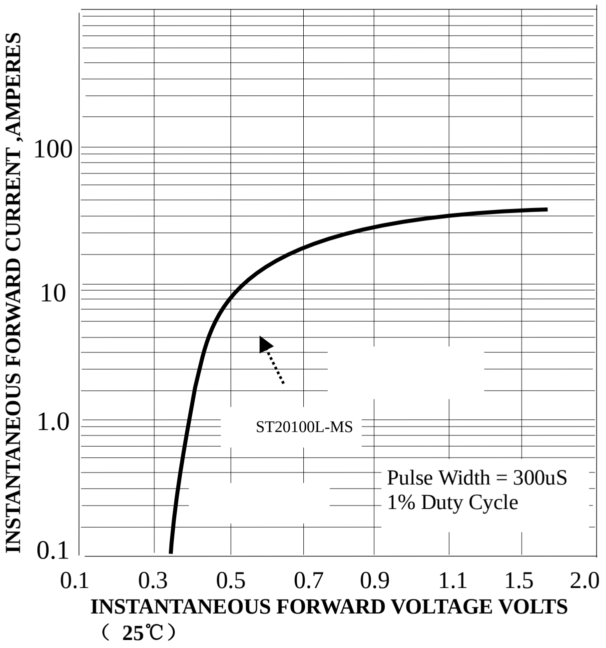
### FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE RATING



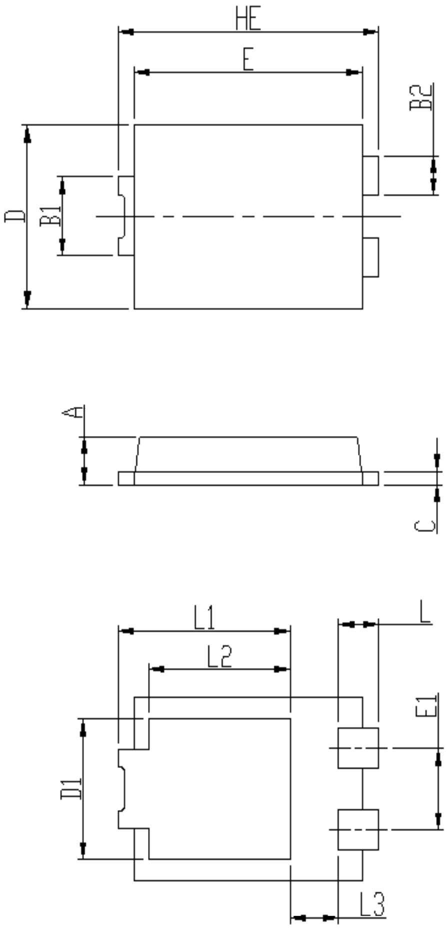
### FIG. 3- TYPICAL REVERSE CHARACTERISTICS



### FIG. 4- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

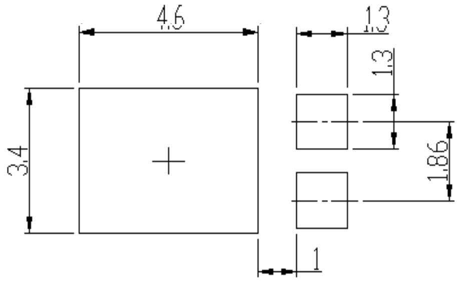


## TO-277 Package Outline Dimensions



| DIM | Unit: mm | | Unit: inch | |
|---|---|---|---|---|
| | MIN | MAX | MIN | MAX |
| HE | 6.4 | 6.6 | 0.252 | 0.260 |
| E | 5.6 | 5.8 | 0.220 | 0.228 |
| D | 4.1 | 4.3 | 0.161 | 0.169 |
| B1 | 1.7 | 1.9 | 0.067 | 0.075 |
| B2 | 0.8 | 1 | 0.031 | 0.039 |
| A | 1.05 | 1.2 | 0.041 | 0.047 |
| C | 0.3 | 0.4 | 0.012 | 0.016 |
| L | 0.85 | 1.1 | 0.033 | 0.043 |
| L1 | 4.2 | 4.4 | 0.165 | 0.173 |
| L2 | 3.52 Typ. | | 0.139 Typ. | |
| L3 | 1.1 | 1.4 | 0.043 | 0.055 |
| D1 | 3 | 3.3 | 0.118 | 0.130 |
| E1 | 1.86 Typ. | | 0.073 Typ. | |

## Suggested Pad Layout



**Note:**
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

## Order information

| Orderable Device | Package | Packing Option |
|---|---|---|
| ST20100L-MS | TO-277 | 5000PCS |

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