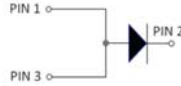


High-Voltage Trench Barrier Schottky Rectifier

Product Summary:

|                 |       |
|-----------------|-------|
| $V_{RRM}$       | 100V  |
| $V_F @ I_F=15A$ | 0.63V |
| $I_{F(AV)}$     | 15A   |



Trench Schottky Technology

Pb-Free Lead Plating & Halogen Free



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25\text{ }^\circ\text{C}$  Unless Otherwise Noted)

| PARAMETERS/TEST CONDITIONS  | SYMBOL         | LIMITS     | UNIT             |
|---|----------------|------------|------------------|
| Maximum Repetitive Peak Reverse Voltage   | $V_{RRM}$      | 100        | V                |
| Maximum Average Forward Rectified Current   | $I_{F(AV)}$    | 15         | A                |
| Peak Forward Surge Current 8.3mS Single Half Sine-wave<br>Superimposed on Rated Load per Diode  | $I_{FSM}$      | 160        |                  |
| Peak Repetitive Reverse Current @ $t_p = 2\text{ }\mu\text{s}$ , 1 kHz,<br>$T_j = 38\text{ }^\circ\text{C} \pm 2\text{ }^\circ\text{C}$ per Diode | $I_{RRM}$      | 1          |                  |
| Non-repetitive Avalanche Energy @ $T_j = 25\text{ }^\circ\text{C}$ , L = 60 mH per Diode  | $E_{AS}$       | 210        | mJ               |
| Voltage rate of change (rated $V_R$ )   | dV/dt          | 10000      | V/ $\mu\text{s}$ |
| Operating Junction & Storage Temperature Range  | $T_j, T_{stg}$ | -40 to 150 | $^\circ\text{C}$ |

THERMAL RESISTANCE RATINGS

| THERMAL RESISTANCE  | SYMBOL          | TYPICAL | MAXIMUM | UNIT                        |
|---------------------|-----------------|---------|---------|-----------------------------|
| Junction-to-Case    | $R_{\theta JC}$ |         | 8       | $^\circ\text{C} / \text{W}$ |
| Junction-to-Ambient | $R_{\theta JA}$ |         | 60      |                             |

<sup>1</sup>Pulse width limited by maximum junction temperature.

<sup>2</sup>Duty cycle  $\leq 1\%$



ELECTRICAL CHARACTERISTICS ( $T_A = 25\text{ }^\circ\text{C}$ , Unless Otherwise Noted)

| PARAMETER                               | SYMBOL   | TEST CONDITIONS     |                                   | LIMITS |       |      | UNIT          |
|---|----------|---------------------|-----------------------------------|--------|-------|------|---------------|
|   |          |                     |                                   | MIN    | TYP   | MAX  |               |
| Breakdown Voltage                       | $V_{BR}$ | $I_R=1.0\text{mA}$  |                                   | 100    |       |      | V             |
| Instantaneous Forward Voltage per Diode | $V_F^1$  | $I_F=5\text{A}$     | $T_A = 25\text{ }^\circ\text{C}$  |        | 0.514 |      | V             |
|   |          | $I_F=7.5\text{A}$   |                                   |        | 0.571 |      |               |
|   |          | $I_F=15\text{A}$    |                                   |        | 0.731 | 0.80 |               |
|   |          | $I_F=5\text{A}$     | $T_A = 125\text{ }^\circ\text{C}$ |        | 0.453 |      |               |
|   |          | $I_F=7.5\text{A}$   |                                   |        | 0.521 |      |               |
|   |          | $I_F=15\text{A}$    |                                   |        | 0.625 | 0.68 |               |
| Reverse Current per Diode               | $I_R^2$  | $V_R = 70\text{V}$  | $T_A = 25\text{ }^\circ\text{C}$  |        | 5     |      | $\mu\text{A}$ |
|   |          |                     | $T_A = 125\text{ }^\circ\text{C}$ |        | 6     |      | $\text{mA}$   |
|   |          | $V_R = 100\text{V}$ | $T_A = 25\text{ }^\circ\text{C}$  |        | 15    | 500  | $\mu\text{A}$ |
|   |          |                     | $T_A = 125\text{ }^\circ\text{C}$ |        | 15    | 35   | $\text{mA}$   |

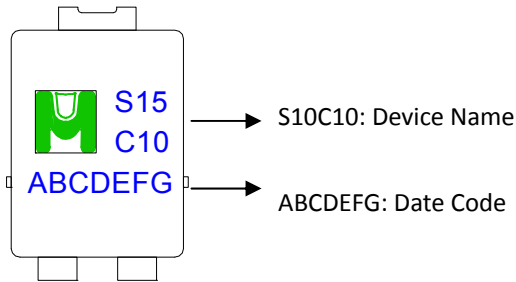
<sup>1</sup>Pulse test : 300  $\mu\text{s}$  Pulse Width, 1% Duty Cycle.

<sup>2</sup>Pulse Width  $\leq 40\text{ms}$ .

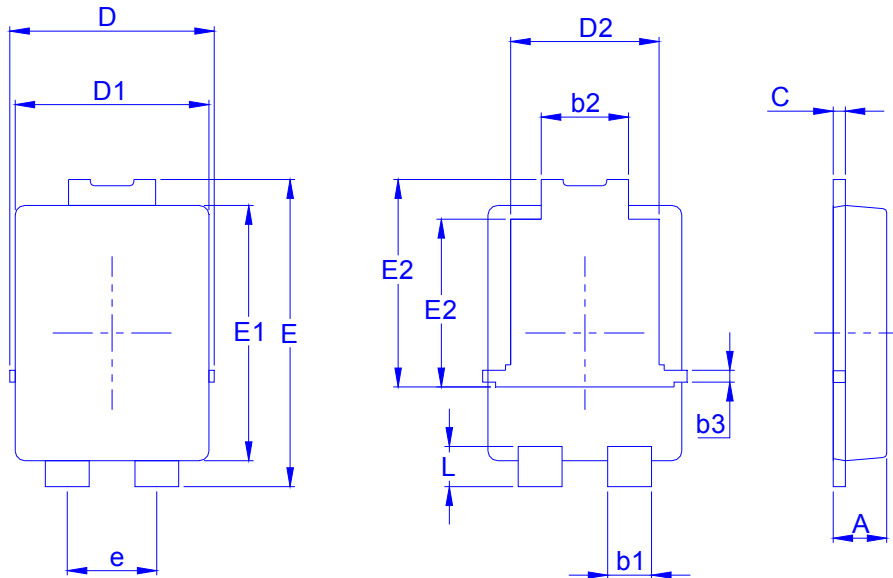


Ordering & Marking Information:

Device Name: EMS10C10UC for TO-277



Outline Drawing



Dimension in mm

| Dimension | A    | b1   | b2   | b3   | C    | D   | D1   | D2   | E   | E1   | E2   | E3  | e    | L    |
|-----------|------|------|------|------|------|-----|------|------|-----|------|------|-----|------|------|
| Min.      | 1.05 | 0.80 | 1.70 | 0.15 | 0.20 | 4.0 | 3.90 | 2.95 | 6.4 | 5.30 | 3.45 | 4.2 | 1.84 | 0.75 |
| Max.      | 1.15 | 0.99 | 1.88 | 0.35 | 0.33 | 4.3 | 4.05 | 3.15 | 6.6 | 5.45 | 3.65 | 4.6 |      | 0.95 |

