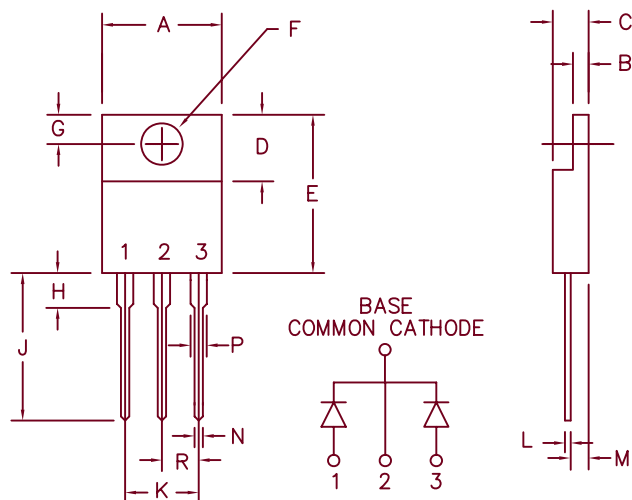


# 20 Amp Schottky Barrier Rectifiers FST2035 — FST2045



| Dim. | Inches  |         | Millimeter |         | Notes |
|------|---------|---------|------------|---------|-------|
|      | Minimum | Maximum | Minimum    | Maximum |       |
| A    | .390    | .415    | 9.91       | 10.54   | Dia.  |
| B    | .045    | .055    | 1.14       | 1.40    |       |
| C    | .180    | .190    | 4.57       | 4.83    |       |
| D    | .245    | .260    | 6.22       | 6.60    |       |
| E    | .550    | .650    | 13.97      | 16.51   |       |
| F    | .139    | .161    | 3.53       | 4.09    |       |
| G    | .100    | .135    | 2.54       | 3.43    |       |
| H    | ---     | .250    | ---        | 6.35    |       |
| J    | .500    | .580    | 12.70      | 14.73   |       |
| K    | .190    | .210    | 4.83       | 5.33    |       |
| L    | .014    | .022    | .357       | .559    |       |
| M    | .080    | .115    | 2.03       | 2.92    |       |
| N    | .015    | .040    | .380       | 1.02    |       |
| P    | .045    | .070    | 1.14       | 1.78    |       |
| R    | .090    | .110    | 2.29       | 2.79    |       |

PLASTIC TO-220AB

| Microsemi Catalog Number | Industry Part Number                                 | Repetitive Peak Reverse Voltage | Transient Peak Reverse Voltage |
|--------------------------|------------------------------------------------------|---------------------------------|--------------------------------|
| FST2035                  | 12CTQ035,15CTQ035<br>20CTQ035                        | 35V                             | 35V                            |
| FST2040                  | MBR1535CT,MBR2035CT<br>12CTQ040,15CTQ040<br>20CTQ040 | 40V                             | 40V                            |
| FST2045                  | MBR1540CT,MBR2040CT<br>12CTQ045,15CTQ045<br>20CTQ045 | 45V                             | 45V                            |
|                          | MBR1545CT,MBR2045CT<br>MBR1545CTP,MBR2045CTP         |                                 |                                |

- Schottky barrier rectifier
- Guard ring for reverse protection
- Low power loss, high efficiency
- High surge capacity
- $V_{RRM}$  35 to 45 Volts

## Electrical Characteristics

|                                   |                      |                                                                    |
|-----------------------------------|----------------------|--------------------------------------------------------------------|
| Average Forward Current per pkg.  | $I_F(AV)$ 20 Amps    | $T_C = 160^\circ C$ , Square wave, $R_{\theta JC} = 1.2^\circ C/W$ |
| Average Forward Current per leg   | $I_F(AV)$ 10 Amps    | $T_C = 160^\circ C$ , Square wave, $R_{\theta JC} = 2.4^\circ C/W$ |
| Maximum Surge Current per leg     | $I_{FSM}$ 225 Amps   | 8.3ms, half sine, $T_J = 175^\circ C$                              |
| Max. Peak Forward Voltage per leg | $V_{FM}$ .48 Volts   | $I_{FM} = 10A$ , $T_J = 175^\circ C^*$                             |
| Max. Peak Forward Voltage per leg | $V_{FM}$ .65 Volts   | $I_{FM} = 10A$ , $T_J = 25^\circ C^*$                              |
| Max. Peak Reverse Current per leg | $I_{RM}$ 10 mA       | $V_{RRM}$ , $T_J = 125^\circ C^*$                                  |
| Max. Peak Reverse Current per leg | $I_{RM}$ 250 $\mu A$ | $V_{RRM}$ , $T_J = 25^\circ C$                                     |
| Typical Junction Capacitance      | $C_J$ 660 pF         | $VR = 5.0V$ , $T_J = 25^\circ C$                                   |

\*Pulse test: Pulse width 300  $\mu sec$  Duty cycle 2%

## Thermal and Mechanical Characteristics

|                                 |                 |                                     |
|---------------------------------|-----------------|-------------------------------------|
| Storage temp range              | $T_{STG}$       | $-55^\circ C$ to $175^\circ C$      |
| Operating junction temp range   | $T_J$           | $-55^\circ C$ to $175^\circ C$      |
| Max thermal resistance per leg  | $R_{\theta JC}$ | $2.4^\circ C/W$                     |
| Max thermal resistance per pkg. | $R_{\theta JC}$ | $1.2^\circ C/W$                     |
| Mounting torque                 |                 | 15 inch pounds maximum (6-32 screw) |
| Weight                          |                 | .08 ounces (2.3 grams) typical      |



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# FST2035 — FST2045

Figure 1  
Typical Forward Characteristics — Per Leg

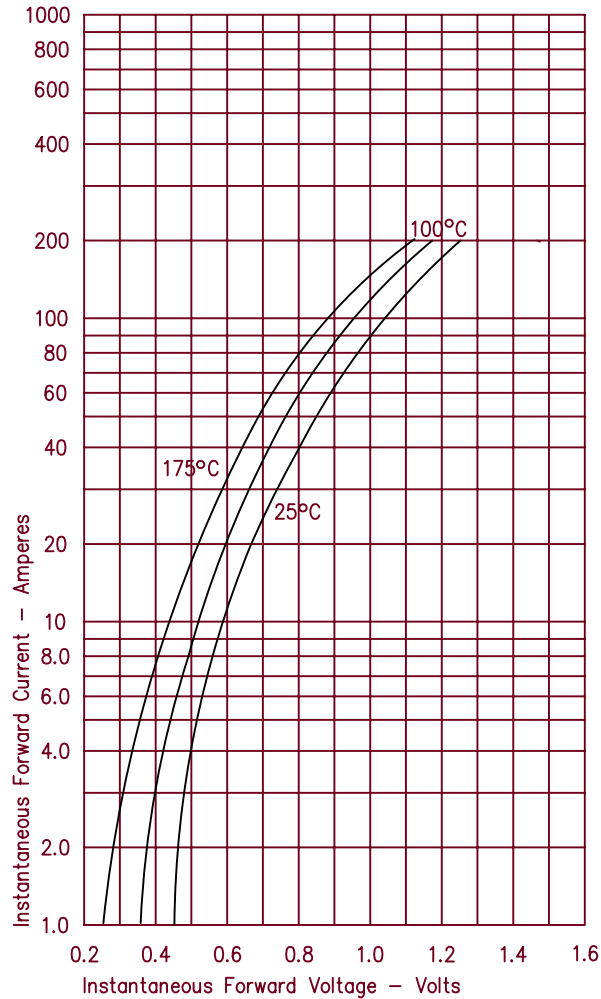


Figure 3  
Typical Junction Capacitance — Per Leg

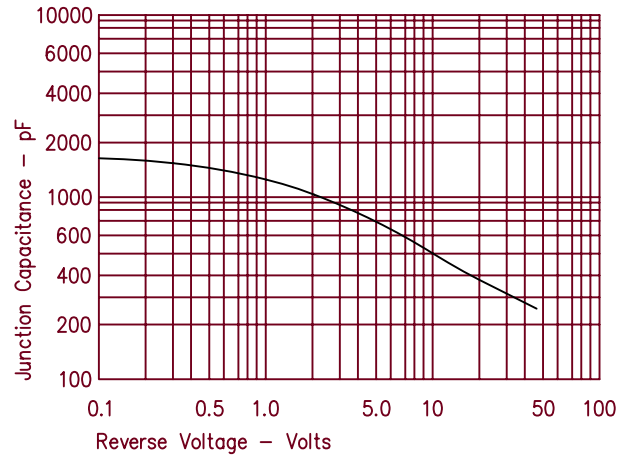


Figure 4  
Forward Current Derating — Per Leg

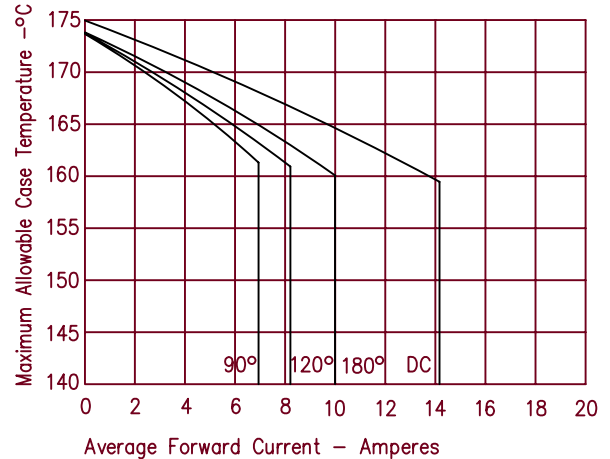


Figure 2  
Typical Reverse Characteristics — Per Leg

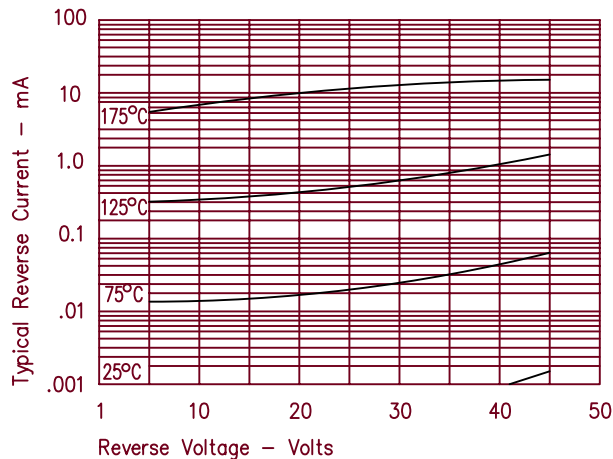


Figure 5  
Maximum Forward Power Dissipation — Per Leg

