# MOSPEC

# S16S30 thru S16S60

**SCHOTTKY BARRIER RECTIFIERS**

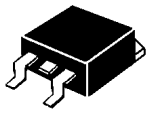
**16 AMPERES**
**30-60 VOLTS**

## Schottky Barrier Rectifiers

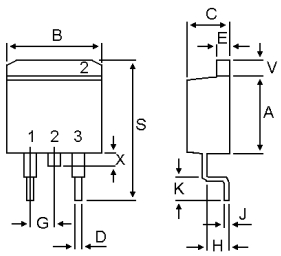
Using the Schottky Barrier principle with a Molybdenum barrier metal. These state-of-the-art geometry features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for low voltage, high frequency rectification, or as free wheeling and polarity protection diodes.

**Features**

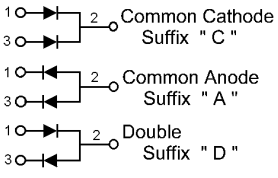
- ∗Low Forward Voltage.
- ∗Low Switching noise.
- ∗High Current Capacity
- ∗Guarantee Reverse Avalanche.
- ∗Guard-Ring for Stress Protection.
- ∗Low Power Loss & High efficiency.
- ∗150℃ Operating Junction Temperature
- ∗Low Stored Charge Majority Carrier Conduction.
- ∗Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O
- ∗ESD: 8KV(Min.) Human-Body Model
- ∗*In compliance with EU RoHs 2002/95/EC directives*



**TO-263 (D2-PAK)**




| DIM | MILLIMETERS | |
|---|---|---|
| | MIN | MAX |
| A | 8.12 | 8.92 |
| B | 9.90 | 10.30 |
| C | 4.23 | 4.83 |
| D | 0.51 | 0.89 |
| E | 1.27 | 1.53 |
| G | 2.54 | BSC |
| H | 2.03 | 2.79 |
| J | 0.31 | 0.51 |
| K | 2.29 | 2.79 |
| S | 14.60 | 15.88 |
| V | 1.57 | 1.83 |
| X | --- | 1.40 |




## MAXIMUM RATINGS

| Characteristic | Symbol | S16S | | | | | | Unit |
|---|---|---|---|---|---|---|---|---|
| | | 30 | 35 | 40 | 45 | 50 | 60 | |
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 30 | 35 | 40 | 45 | 50 | 60 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 21 | 25 | 28 | 32 | 35 | 42 | V |
| Average Rectifier Forward Current<br>Total Device (Rated $V_R$), $T_C$=100℃ | $I_{F(AV)}$ | 8.0<br>16 | | | | | | A |
| Peak Repetitive Forward Current<br>(Rate $V_R$, Square Wave, 20kHz) | $I_{FM}$ | 16 | | | | | | A |
| Non-Repetitive Peak Surge Current<br>(Surge applied at rate load conditions halfware, single phase, 60Hz) | $I_{FSM}$ | 150 | | | | | | A |
| Operating and Storage Junction Temperature Range | $T_J$ , $T_{stg}$ | -65 to +150 | | | | | | ℃ |

## ELECTRIAL CHARACTERISTICS

| Characteristic | Symbol | S16S | | | | | | Unit |
|---|---|---|---|---|---|---|---|---|
| | | 30 | 35 | 40 | 45 | 50 | 60 | |
| Maximum Instantaneous Forward Voltage<br>( $I_F$ =8 Amp $T_C$ = 25℃)<br>( $I_F$ =8 Amp $T_C$ = 100℃) | $V_F$ | 0.55<br>0.48 | | | | 0.70<br>0.60 | | V |
| Typical Thermal Resistance junction to case | $R_{\theta j\text{-}c}$ | 3.8 | | | | | | ℃/w |
| Maximum Instantaneous Reverse Current<br>( Rated DC Voltage, $T_C$ = 25℃)<br>( Rated DC Voltage, $T_C$ = 125℃) | $I_R$ | 0.5<br>20 | | | | | | mA |

# S16S30 Thru S16S60

FIG-1 FORWARD CURRENT DERATING CURVE

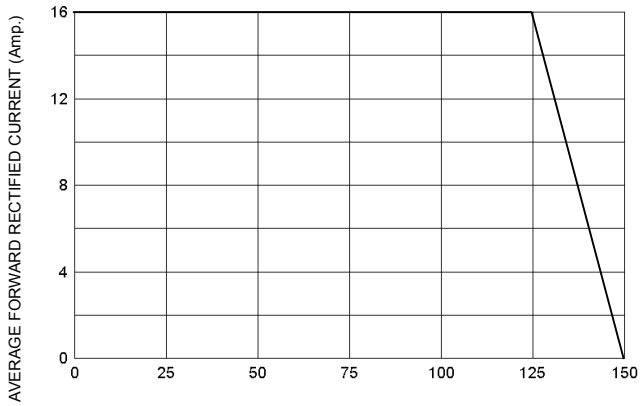



FIG-2 TYPICAL FORWARD CHARACTERISITICS

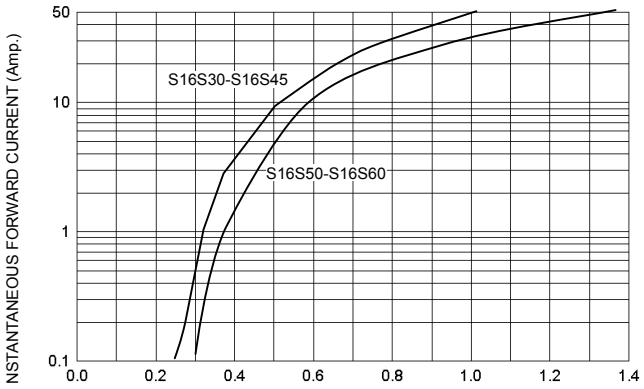



FIG-3 TYPICAL REVERSE CHARACTERISTICS

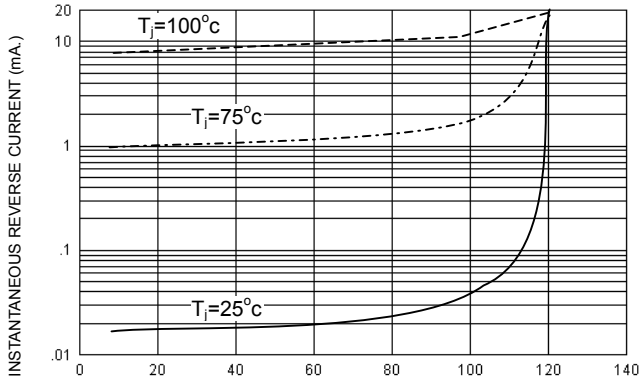



FIG-4 TYPICAL JUNCTION CAPACITANCE

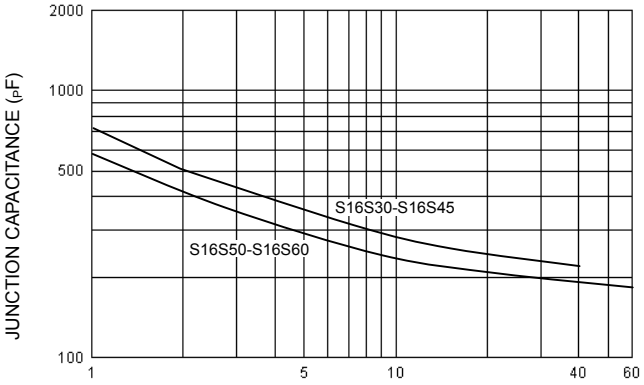
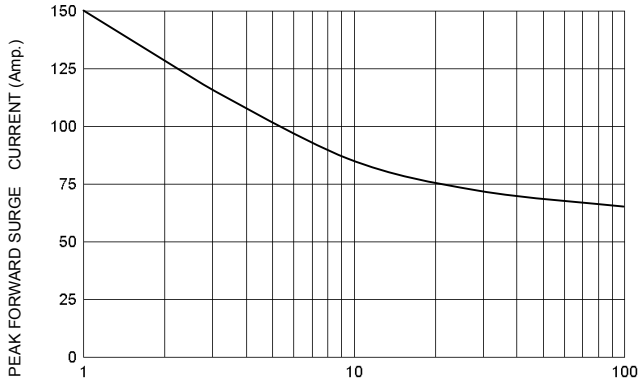



FIG-5 PEAK FORWARD SURGE CURRENT



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