



# THE DATASHEET OF MURS360HE3/57T

## Surface Mount Ultrafast Plastic Rectifier



**SMC (DO-214AB)**

### FEATURES

- Glass passivated pellet chip junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified available
  - Automotive ordering code: base P/NHE3 or P/NHM3
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
**HALOGEN**  
**FREE**  
Available

### TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer, automotive and telecommunication.

### MECHANICAL DATA

**Case:** SMC (DO-214AB)

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade  
Base P/N-M3 - halogen-free, RoHS-compliant, commercial grade

Base P/NHE3\_X - RoHS-compliant and AEC-Q101 qualified  
Base P/NHM3\_X - halogen-free, RoHS-compliant, and AEC-Q101 qualified

("\_X" denotes revision code e.g. A, B, ....)

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 2 whisker test, HE3 suffix meets JESD 201 class 2 whisker test

**Polarity:** color band denotes cathode end

| PRIMARY CHARACTERISTICS |                |
|-------------------------|----------------|
| $I_{F(AV)}$             | 3.0 A          |
| $V_{RRM}$               | 400 V, 600 V   |
| $I_{FSM}$               | 125 A          |
| $t_{rr}$                | 50 ns          |
| $V_F$                   | 1.05 V         |
| $T_J \text{ max.}$      | 175 °C         |
| Package                 | SMC (DO-214AB) |
| Circuit configuration   | Single         |

| MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)                    |                                                    |             |         |      |
|------------------------------------------------------------------------------------|----------------------------------------------------|-------------|---------|------|
| PARAMETER                                                                          | SYMBOL                                             | MURS340     | MURS360 | UNIT |
| Device marking code                                                                |                                                    | MG          | MJ      |      |
| Maximum repetitive peak reverse voltage                                            | V <sub>RRM</sub>                                   | 400         | 600     | V    |
| Working peak reverse voltage                                                       | V <sub>RWM</sub>                                   | 400         | 600     | V    |
| Maximum DC blocking voltage                                                        | V <sub>DC</sub>                                    | 400         | 600     | V    |
| Maximum average forward rectified current at: (fig. 1)                             | T <sub>L</sub> = 130 °C<br>T <sub>L</sub> = 115 °C | 3.0         |         | A    |
|                                                                                    |                                                    | 4.0         |         |      |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I <sub>FSM</sub>                                   | 125         |         | A    |
| Operating junction and storage temperature range                                   | T <sub>J</sub> , T <sub>STG</sub>                  | -65 to +175 |         | °C   |



| ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                                                                                                        |                         |                               |         |         |      |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------|---------|---------|------|
| PARAMETER                                                                  | TEST CONDITIONS                                                                                        |                         | SYMBOL                        | MURS340 | MURS360 | UNIT |
| Maximum instantaneous forward voltage                                      | I <sub>F</sub> = 3.0 A                                                                                 | T <sub>J</sub> = 25 °C  | V <sub>F</sub> <sup>(1)</sup> | 1.25    |         | V    |
|                                                                            | I <sub>F</sub> = 4.0 A                                                                                 |                         |                               | 1.28    |         |      |
|                                                                            | I <sub>F</sub> = 3.0 A                                                                                 | T <sub>J</sub> = 150 °C |                               | 1.05    |         |      |
| Maximum instantaneous reverse current at rated DC blocking voltage         |                                                                                                        | T <sub>J</sub> = 25 °C  | I <sub>R</sub> <sup>(1)</sup> | 10      |         | μA   |
|                                                                            |                                                                                                        | T <sub>J</sub> = 150 °C |                               | 250     |         |      |
| Maximum reverse recovery time                                              | I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A                               |                         | t <sub>rr</sub>               | 50      |         | ns   |
| Maximum reverse recovery time                                              | I <sub>F</sub> = 1.0 A, dI/dt = 50 A/μs, V <sub>R</sub> = 30 V, I <sub>rr</sub> = 10 % I <sub>RM</sub> |                         | t <sub>rr</sub>               | 75      |         | ns   |
| Maximum forward recovery time                                              | I <sub>F</sub> = 1.0 A, dI/dt = 100 A/μs, recovery to 1.0 V                                            |                         | t <sub>fr</sub>               | 25      |         | ns   |

**Note**

<sup>(1)</sup> Pulse test:  $t_p = 300\text{ }\mu\text{s}$ , duty cycle  $\leq 2\text{ \%}$

| <b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted) |                 |         |         |                             |
|---------------------------------------------------------------------------------------------|-----------------|---------|---------|-----------------------------|
| PARAMETER                                                                                   | SYMBOL          | MURS340 | MURS360 | UNIT                        |
| Typical thermal resistance junction to lead                                                 | $R_{\theta JL}$ | 11      |         | $^{\circ}\text{C}/\text{W}$ |

| <b>ORDERING INFORMATION</b> (Example) |                 |                        |               |                                    |
|---------------------------------------|-----------------|------------------------|---------------|------------------------------------|
| PREFERRED P/N                         | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                      |
| MURS360-E3/57T                        | 0.211           | 57T                    | 850           | 7" diameter plastic tape and reel  |
| MURS360-E3/9AT                        | 0.211           | 9AT                    | 3500          | 13" diameter plastic tape and reel |
| MURS360HE3_A/H <sup>(1)</sup>         | 0.211           | H                      | 850           | 7" diameter plastic tape and reel  |
| MURS360HE3_A/I <sup>(1)</sup>         | 0.211           | I                      | 3500          | 13" diameter plastic tape and reel |
| MURS360-M3/57T                        | 0.211           | 57T                    | 850           | 7" diameter plastic tape and reel  |
| MURS360-M3/9AT                        | 0.211           | 9AT                    | 3500          | 13" diameter plastic tape and reel |
| MURS360HM3_A/H <sup>(1)</sup>         | 0.211           | H                      | 850           | 7" diameter plastic tape and reel  |
| MURS360HM3_A/I <sup>(1)</sup>         | 0.211           | I                      | 3500          | 13" diameter plastic tape and reel |

**Note**

<sup>(1)</sup> AEC-Q101 qualified



**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

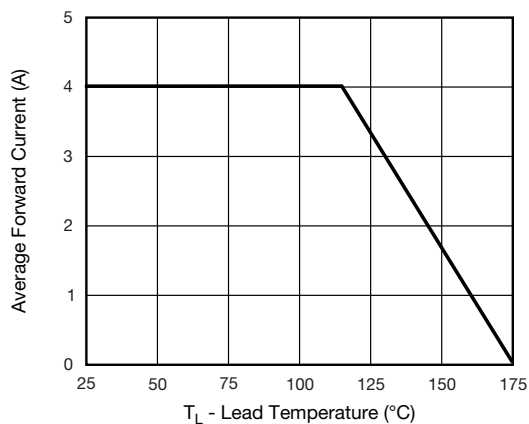


Fig. 1 - Forward Current Derating Curve

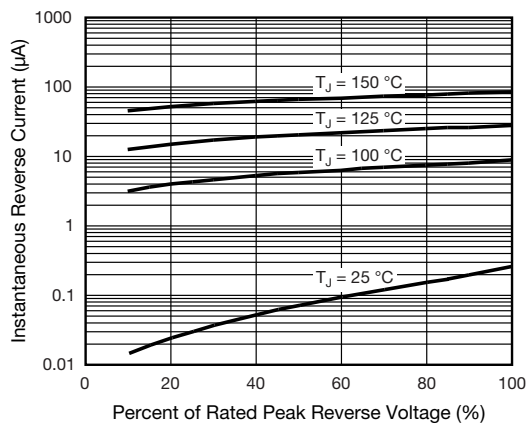


Fig. 4 - Typical Reverse Characteristics

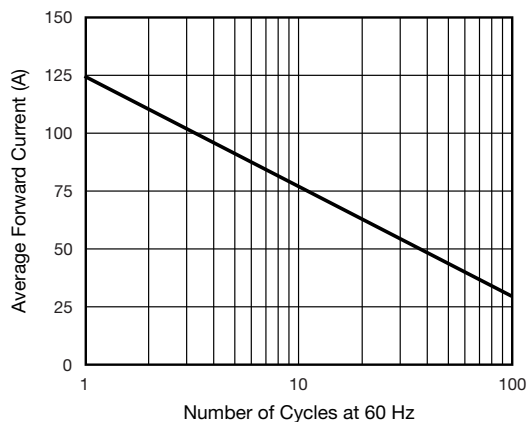


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

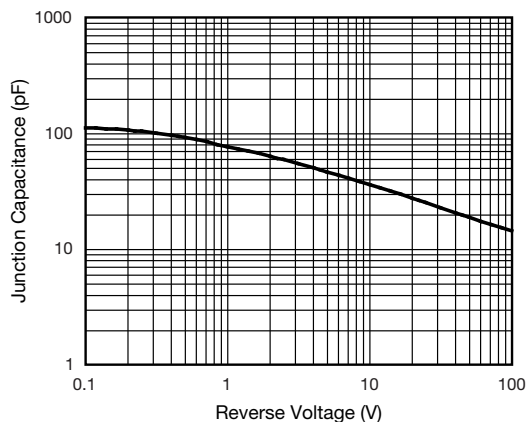


Fig. 5 - Typical Junction Capacitance

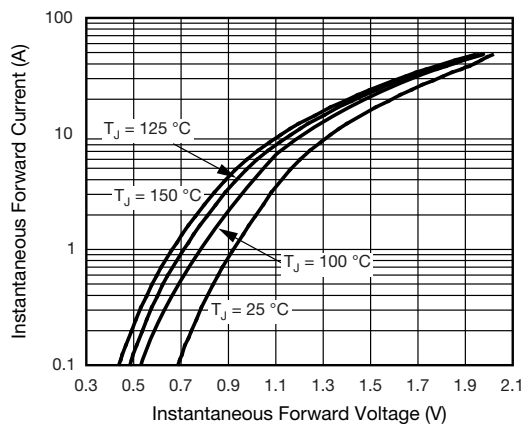


Fig. 3 - Typical Instantaneous Forward Characteristics

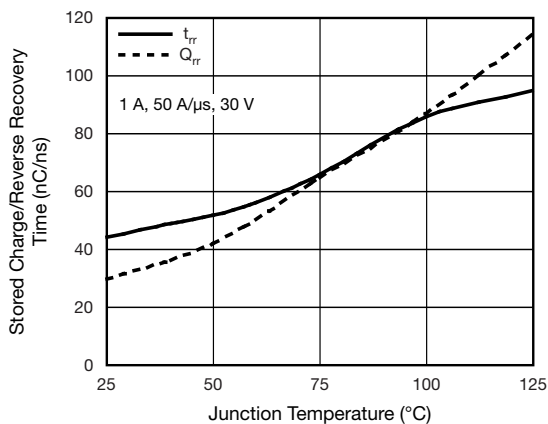
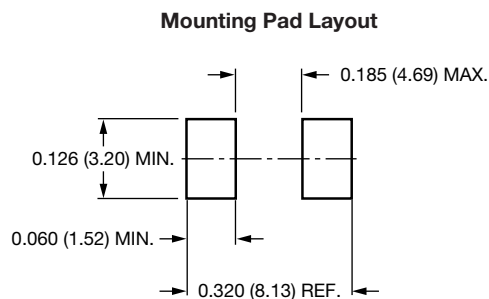
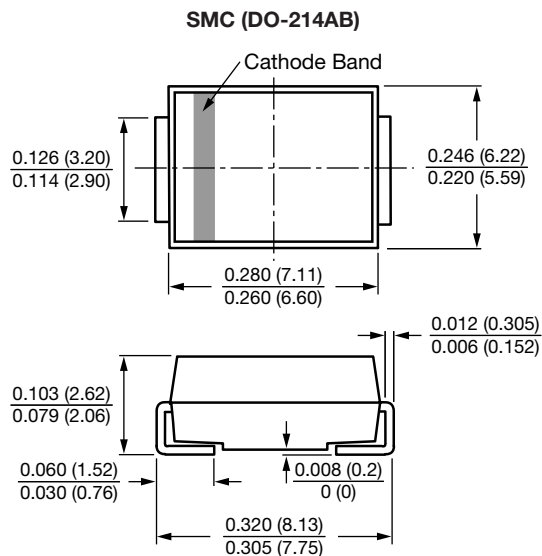


Fig. 6 - Typical Reverse Switching Characteristics



## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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