BA157, BA158, BA159D, BA159

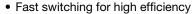
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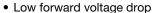
Fast Switching Plastic Rectifier



| PRIMARY CHARACTERISTICS | | | | | |
|-------------------------|-----------------------------|--|--|--|--|
| I _{F(AV)} | 1.0 A | | | | |
| V_{RRM} | 400 V, 600 V, 800 V, 1000 V | | | | |
| I _{FSM} | 20 A | | | | |
| t _{rr} | 150 ns, 250 ns, 500 ns | | | | |
| I _R | 5.0 μA | | | | |
| V _F | 1.3 V | | | | |
| T _J max. | 125 °C | | | | |
| Package | DO-204AL (DO-41) | | | | |
| Diode variation | Single die | | | | |

FEATURES





Low leakage current

• High forward surge capability

• Solder dip 275 °C max. 10 s, per JESD 22-B106

 Material categorization: For definitions of compliance please see www.vishay.com/doc?99912







For use in fast switching rectification of power supply, inverters, converters and freewheeling diodes for consumer and telecommunication.

Note

• These devices are not AEC-Q101 qualified.

MECHANICAL DATA

Case: DO-204AL, molded epoxy body Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: Color band denotes cathode end

| MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted) | | | | | | |
|-------------------------------------------------------------------------------------------------|--------------------|---------------|-------|--------|-------|------|
| PARAMETER | SYMBOL | BA157 | BA158 | BA159D | BA159 | UNIT |
| Maximum repetitive peak reverse voltage | V _{RRM} | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | V _{RMS} | 280 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage | V _{DC} | 400 | 600 | 800 | 1000 | V |
| Maximum average forward rectified current 0.375" (9.5 mm) lead length at T _A = 55 °C | I _{F(AV)} | 1.0 | | | | |
| Peak forward surge current 10 ms single half sine-wave superimposed on rated load | I _{FSM} | 20 | | | | |
| Maximum operation junction temperature | T_J | - 65 to + 125 | | | | |
| Maximum storage temperature | T _{STG} | - 65 to + 150 | | | | |

| ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | | |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------|--|-----------------|-------|-------|--------|-------|------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | BA157 | BA158 | BA159D | BA159 | UNIT |
| Maximum instantaneous forward voltage | 1.0 A | | V _F | 1.3 | | | V | |
| Maximum DC reverse current at rated DC blocking voltage | T _A = 25 °C | | | | μΑ | | | |
| Maximum reverse recovery time | $I_F = 0.5 \text{ A}, I_R = 1.0 \text{ A}, I_{rr} = 0.25 \text{ A}$ | | t _{rr} | 150 | 250 | 50 | 00 | ns |
| Typical junction capacitance | 4.0 V, 1 MHz | | CJ | 12 | | | pF | |



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| ORDERING INFORMATION (Example) | | | | | | |
|------------------------------------------------------|------|---------------|---------------|----------------------------------|--|--|
| PREFERRED P/N UNIT WEIGHT (g) PREFERRED PACKAGE CODE | | BASE QUANTITY | DELIVERY MODE | | | |
| BA158-E3/54 | 0.33 | 54 | 5500 | 13" diameter paper tape and reel | | |
| BA158-E3/73 | 0.33 | 73 | 3000 | Ammo pack packaging | | |

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25$ °C unless otherwise noted)

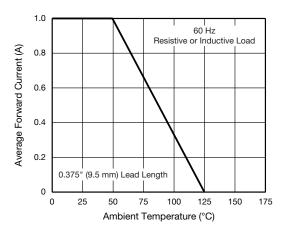


Fig. 1 - Forward Current Derating Curve

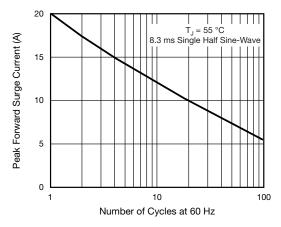


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

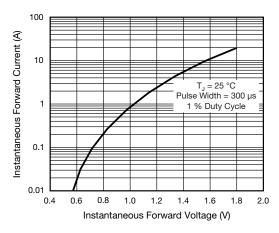


Fig. 3 - Typical Instantaneous Forward Characteristics

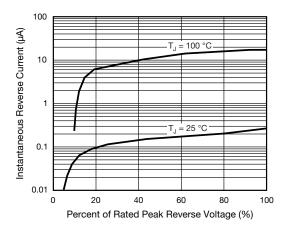


Fig. 4 - Typical Reverse Characteristics



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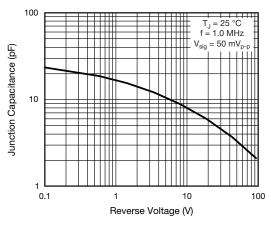


Fig. 5 - Typical Junction Capacitance

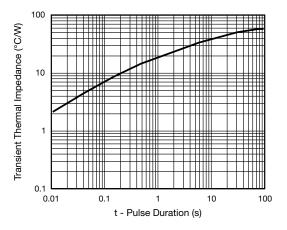
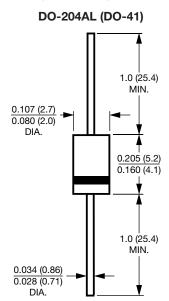


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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