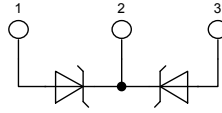


Schottky Diode Gen²

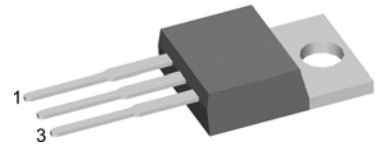
High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

Part number

DSA 60 C 150 PB



$V_{RRM} = 150\text{ V}$
 $I_{FAV} = 2 \times 30\text{ A}$
 $V_F = 0.80\text{ V}$



Backside: cathode

Features / Advantages:

- Very low V_f
- Extremely low switching losses
- low I_{rm} values
- Improved thermal behaviour
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching

Applications:

- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

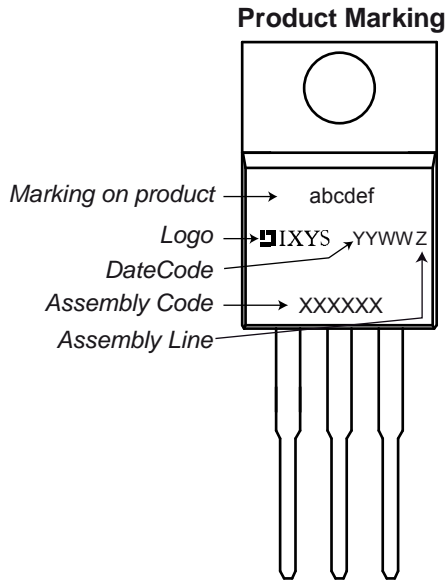
Package:

- Housing: TO-220
- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

| Symbol | Definition | Conditions | Ratings | | | Unit |
|------------|-------------------------------------|---------------------------------------|---------|------|------|------|
| | | | min. | typ. | max. | |
| V_{RRM} | max. repetitive reverse voltage | | | | 150 | V |
| I_R | reverse current | $V_R = 150\text{ V}$ | | | 0.45 | mA |
| | | $V_R = 150\text{ V}$ | | | 5 | mA |
| V_F | forward voltage | $I_F = 30\text{ A}$ | | | 0.93 | V |
| | | $I_F = 60\text{ A}$ | | | 1.09 | V |
| | | $I_F = 30\text{ A}$ | | | 0.80 | V |
| | | $I_F = 60\text{ A}$ | | | 0.98 | V |
| I_{FAV} | average forward current | rectangular d = 0.5 | | | 30 | A |
| V_{F0} | threshold voltage | } for power loss calculation only | | | 0.55 | V |
| r_F | slope resistance | | | | 6 | mΩ |
| R_{thJC} | thermal resistance junction to case | | | | 0.85 | K/W |
| T_{VJ} | virtual junction temperature | | -55 | | 175 | °C |
| P_{tot} | total power dissipation | | | | 175 | W |
| I_{FSM} | max. forward surge current | t = 10 ms (50 Hz), sine | | | 200 | A |
| C_J | junction capacitance | $V_R = 12\text{ V}; f = 1\text{ MHz}$ | | 289 | | pF |

| Symbol | Definition | Conditions | Ratings | | | Unit |
|---------------|-------------------------------------|----------------------------|---------|------|------|------|
| | | | min. | typ. | max. | |
| I_{RMS} | RMS current | per terminal ¹⁾ | | | 35 | A |
| R_{thCH} | thermal resistance case to heatsink | | | 0.50 | | K/W |
| T_{stg} | storage temperature | | -55 | | 150 | °C |
| Weight | | | | 2 | | g |
| M_D | mounting torque | | 0.4 | | 0.6 | Nm |
| F_C | mounting force with clip | | 20 | | 60 | N |

¹⁾ I_{RMS} is typically limited by the pin-to-chip resistance (1); or by the current capability of the chip (2).
 In case of (1) and a common cathode/anode configuration with a non-isolated backside, the current capability can be increased by connecting the backside.

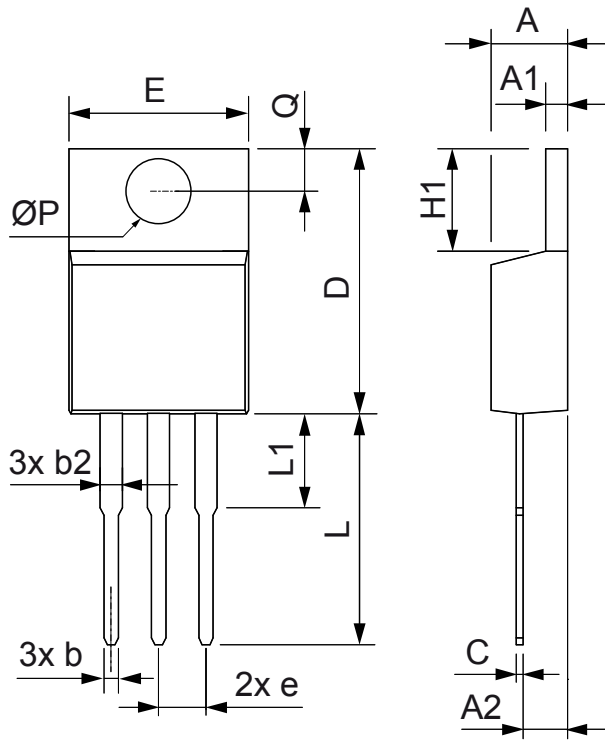


Part number

- D = Diode
- S = Schottky Diode
- A = low VF
- 60 = Current Rating [A]
- C = Common Cathode
- 150 = Reverse Voltage [V]
- PB = TO-220AB (3)

| Ordering | Part Name | Marking on Product | Delivering Mode | Base Qty | Code Key |
|----------|-----------------|--------------------|-----------------|----------|----------|
| Standard | DSA 60 C 150 PB | DSA60C150PB | Tube | 50 | 509198 |

| Similar Part | Package | Voltage class |
|--------------|--------------|---------------|
| DSA50C150HB | TO-247AD (3) | 150 |

Outlines TO-220


| Dim. | Millimeter | | Inches | |
|-----------------|------------|-------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 4.32 | 4.82 | 0.170 | 0.190 |
| A1 | 1.14 | 1.39 | 0.045 | 0.055 |
| A2 | 2.29 | 2.79 | 0.090 | 0.110 |
| b | 0.64 | 1.01 | 0.025 | 0.040 |
| b2 | 1.15 | 1.65 | 0.045 | 0.065 |
| C | 0.35 | 0.56 | 0.014 | 0.022 |
| D | 14.73 | 16.00 | 0.580 | 0.630 |
| E | 9.91 | 10.66 | 0.390 | 0.420 |
| e | 2.54 | BSC | 0.100 | BSC |
| H1 | 5.85 | 6.85 | 0.230 | 0.270 |
| L | 12.70 | 13.97 | 0.500 | 0.550 |
| L1 | 2.79 | 5.84 | 0.110 | 0.230 |
| $\varnothing P$ | 3.54 | 4.08 | 0.139 | 0.161 |
| Q | 2.54 | 3.18 | 0.100 | 0.125 |

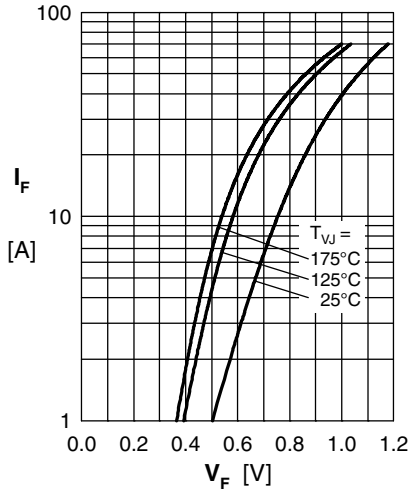


Fig. 1 Maximum forward voltage drop characteristics

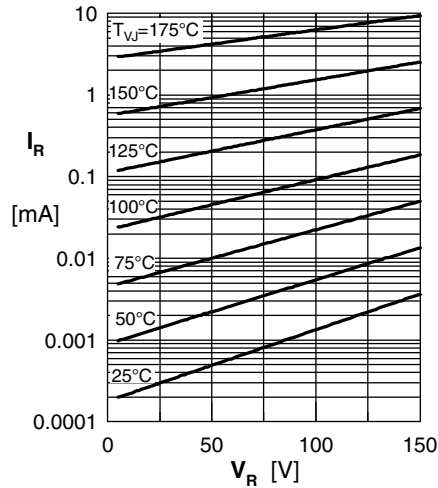


Fig. 2 Typ. reverse current I_R vs. reverse voltage V_R

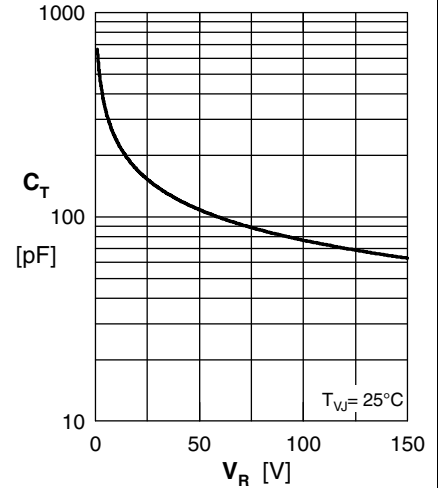


Fig. 3 Typ. junction capacitance C_T vs. reverse voltage V_R

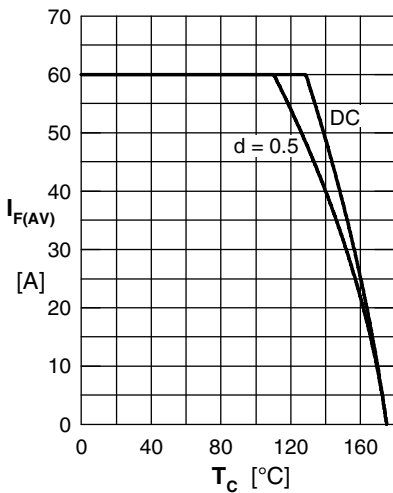


Fig. 4 Average forward current $I_{F(AV)}$ vs. case temperature T_C

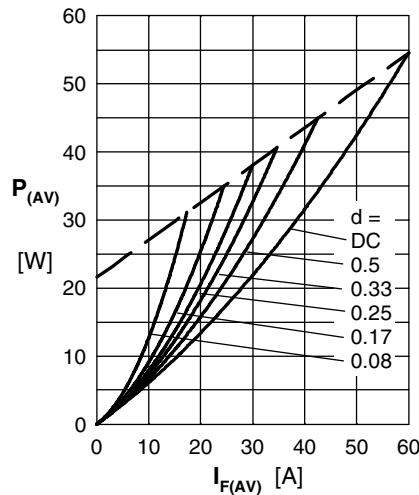


Fig. 5 Forward power loss characteristics

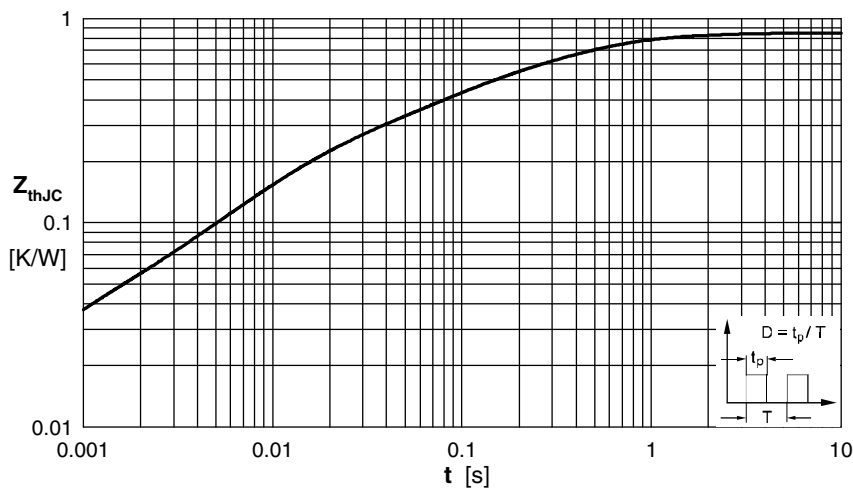


Fig. 6 Transient thermal impedance junction to case at various duty cycles

| i | R_{thi} [K/W] | t_i [s] |
|---|-----------------|-----------|
| 1 | 0.02326 | 0.0005 |
| 2 | 0.1539 | 0.011 |
| 3 | 0.2031 | 0.072 |
| 4 | 0.3892 | 0.34 |
| 5 | 0.08053 | 1.5 |