

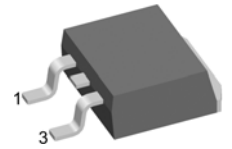
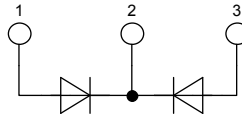
HiPerFRED

High Performance Fast Recovery Diode
 Low Loss and Soft Recovery
 Common Cathode

$V_{RRM} = 300\text{ V}$
 $I_{FAV} = 2x\ 30\text{ A}$
 $t_{rr} = 35\text{ ns}$

Part number

DPG 60 C 300 PC



Backside: cathode

Features / Advantages:

- Planar passivated chips
- Very low leakage current
- Very short recovery time
- Improved thermal behaviour
- Very low I_{rm} -values
- Very soft recovery behaviour
- Avalanche voltage rated for reliable operation
- Soft reverse recovery for low EMI/RFI
- Low I_{rm} reduces:
 - Power dissipation within the diode
 - Turn-on loss in the commutating switch

Applications:

- Antiparallel diode for high frequency switching devices
- Antisaturation diode
- Snubber diode
- Free wheeling diode
- Rectifiers in switch mode power supplies (SMPS)
- Uninterruptible power supplies (UPS)

Package:

- Housing: TO-263 (D2Pak)
- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

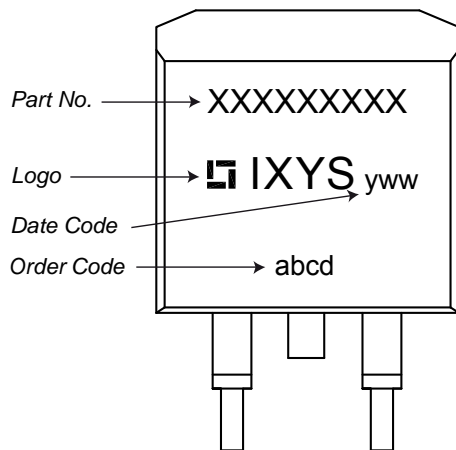
Ratings

| Symbol | Definition | Conditions | Ratings | | | Unit | |
|------------|-------------------------------------|---|--------------------------------|------|------|--------------------|---|
| | | | min. | typ. | max. | | |
| V_{RRM} | max. repetitive reverse voltage | $T_{VJ} = 25^{\circ}\text{C}$ | | | 300 | V | |
| I_R | reverse current | $V_R = 300\text{ V}$ | | | 1 | μA | |
| | | $V_R = 300\text{ V}$ | | | 0.1 | mA | |
| V_F | forward voltage | $I_F = 30\text{ A}$ | | | 1.34 | V | |
| | | $I_F = 60\text{ A}$ | | | 1.63 | V | |
| | | $I_F = 30\text{ A}$ | $T_{VJ} = 150^{\circ}\text{C}$ | | | 1.06 | V |
| | | $I_F = 60\text{ A}$ | $T_{VJ} = 150^{\circ}\text{C}$ | | | 1.39 | V |
| I_{FAV} | average forward current | rectangular, $d = 0.5$ | | | 30 | A | |
| V_{FO} | threshold voltage | $T_{VJ} = 175^{\circ}\text{C}$ | | | 0.70 | V | |
| r_F | slope resistance | | | | 10.5 | $\text{m}\Omega$ | |
| R_{thJC} | thermal resistance junction to case | | | | 0.85 | K/W | |
| T_{VJ} | virtual junction temperature | | -55 | | 175 | $^{\circ}\text{C}$ | |
| P_{tot} | total power dissipation | $T_C = 25^{\circ}\text{C}$ | | | 90 | W | |
| I_{FSM} | max. forward surge current | $t = 10\text{ ms}$ (50 Hz), sine | | | 300 | A | |
| I_{RM} | max. reverse recovery current | $T_{VJ} = 25^{\circ}\text{C}$ | | | 3 | A | |
| | | $I_F = 30\text{ A}; V_R = 100\text{ V}$ | | | tbd | A | |
| | | $T_{VJ} = \text{ }^{\circ}\text{C}$ | | | | | |
| t_{rr} | reverse recovery time | $-di_F/dt = 200\text{ A}/\mu\text{s}$ | | | 35 | ns | |
| | | $T_{VJ} = 25^{\circ}\text{C}$ | | | | | |
| | | $T_{VJ} = \text{ }^{\circ}\text{C}$ | | | tbd | ns | |
| C_J | junction capacitance | $V_R = \text{tbd V}; f = 1\text{ MHz}$ | | | tbd | pF | |
| E_{AS} | non-repetitive avalanche energy | $I_{AS} = 9\text{ A}; L = 100\ \mu\text{H}$ | | | 0.5 | mJ | |
| I_{AR} | repetitive avalanche current | $V_A = 1.5 \cdot V_R$ typ.; $f = 10\text{ kHz}$ | | | 0.9 | A | |

| Symbol | Definition | Conditions | Ratings | | | Unit |
|---------------|-------------------------------------|-----------------------|---------|------|------|------|
| | | | min. | typ. | max. | |
| I_{RMS} | RMS current | per pin ¹⁾ | | | 35 | A |
| R_{thCH} | thermal resistance case to heatsink | | | 0.25 | | K/W |
| T_{stg} | storage temperature | | -55 | | 150 | °C |
| Weight | | | | 2 | | g |
| F_c | mounting force with clip | | 20 | | 60 | N |

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

Product Marking



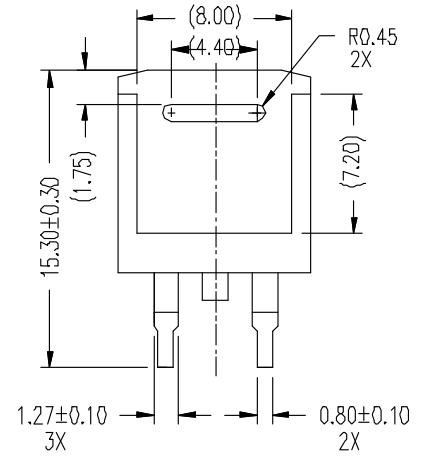
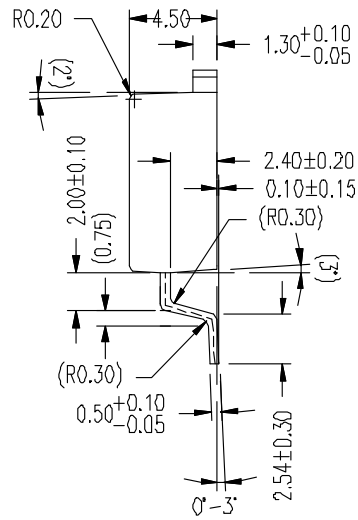
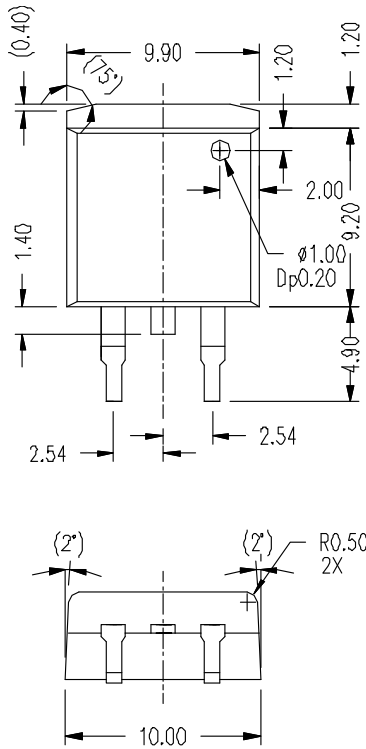
Part number

- D = Diode
- P = HiPerFRED
- G = extreme fast
- 60 = Current Rating [A]
- C = Common Cathode
- 300 = Reverse Voltage [V]
- PC = TO-263AB (D2Pak) (2)

| Ordering | Part Name | Marking on Product | Delivering Mode | Base Qty | Code Key |
|----------|-----------------|--------------------|-----------------|----------|----------|
| Standard | DPG 60 C 300 PC | DPG60C300PC | Tube or Reel | 50/800 | 503494 |

| Similar Part | Package | Voltage Class |
|--------------|---------|---------------|
| DPG60C300HB | TO-247 | 300 |
| DPG60C300QB | TO-3P | 300 |
| DPG60C400QB | TO-3P | 400 |
| DPG60C200QB | TO-3P | 200 |

Outlines TO-263 (D2Pak)



NOTE:

1. These dimensions do not include mold protusion.
2. () is reference dimension only.