International
IOR Rectifier

PD - 94354

HF51D120ACE

Hexfred Die in Wafer Form

Features

- GEN3 Hexfred Technology
- Low V_F
- Low I_{RR}
- Low t_{RR}
- Soft Reverse Recovery

Benefits

- Benchmark Efficiency for Motor Control Applications
- Rugged Transient Performance
- Low EMI
- Excellent Current Sharing in Parallel Operation
- Qualified for Industrial Market

1200V
$I_{F(nom)}$=50A
$V_{F(typ)}$= 1.82V @ $I_{F(nom)}$ @ 25°C
Motor Control Antiparallel Diode
125mm Wafer

Reference Standard IR Package Part: IRGPS60B120KD

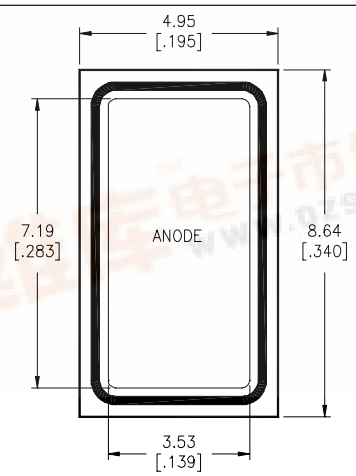
Electrical Characteristics (Wafer Form)

Parameter	Description	Guaranteed (min, max)	Test Conditions
V_F	Forward Voltage Drop	1.1V min, 1.5V max	I_C = 10A, T_J = 25°C
BV_R	Reverse Breakdown Voltage	1200V min	T_J = 25°C, I_R = 500µA
I_{RM}	Reverse Leakage Current	20µA max	T_J = 25°C, V_R = 1200V

Mechanical Data

Nominal Backmetal Composition, (Thickness)	Cr- Ni - Ag, (1kA - 4kA - 6kA)
Nominal Front Metal Composition, (Thickness)	99% Al/1% Si, (3µm)
Dimensions	0.195" x 0.340"
Wafer Diameter	125mm, with std. < 100 > flat
Wafer Thickness, Tolerance	310µm, +/-15µm
Relevant Die Mechanical Dwg. Number	01 - 5550
Minimum Street Width	100µm
Reject Ink Dot Size	0.25mm diameter minimum
Ink Dot Location	Consistent throughout same wafer lot
Recommended Storage Environment	Store in original container, in dessicated nitrogen, with no contamination
Recommended Die Attach Conditions	For optimum electrical results, die attach temperature should not exceed 300°C

Die Outline



NOTES:

1. ALL DIMENSIONS ARE SHOWN IN MILLIMETERS [INCHES].
2. CONTROLLING DIMENSION: [INCH].
3. DIMENSIONAL TOLERANCES:

BONDING PADS:	< 0.635	TOLERANCE =	+/− 0.013
WIDTH	< [.0250]	TOLERANCE =	+/− [.0005]
&	> 0.635	TOLERANCE =	+/− 0.025
LENGTH	> [.0250]	TOLERANCE =	+/− [.0010]
OVERALL DIE:	< 1.270	TOLERANCE =	+/− 0.102
WIDTH	< [.050]	TOLERANCE =	+/− [.004]
&	> 1.270	TOLERANCE =	+/− 0.203
LENGTH	> [.050]	TOLERANCE =	+/− [.008]

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Fig.1 - Typical Diode Recovery
V_{CC} = 600V; Rg = 4.7 ; T_J = 125°C;
L = 200µH; Driver = IRGPS60B120KD

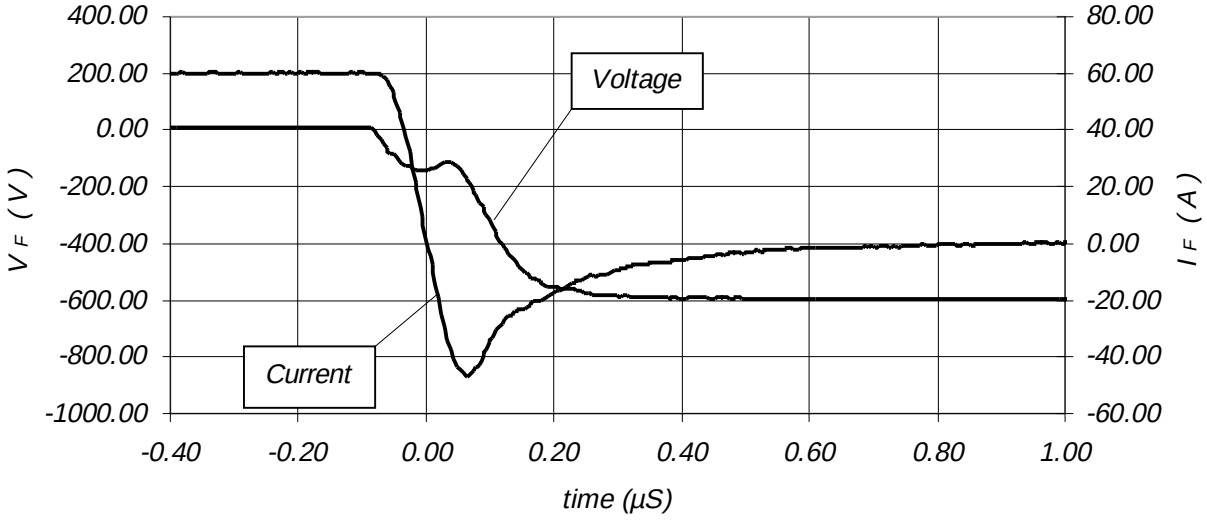

Fig.2 - Typ. Diode Forward Characteristics tp=80µs

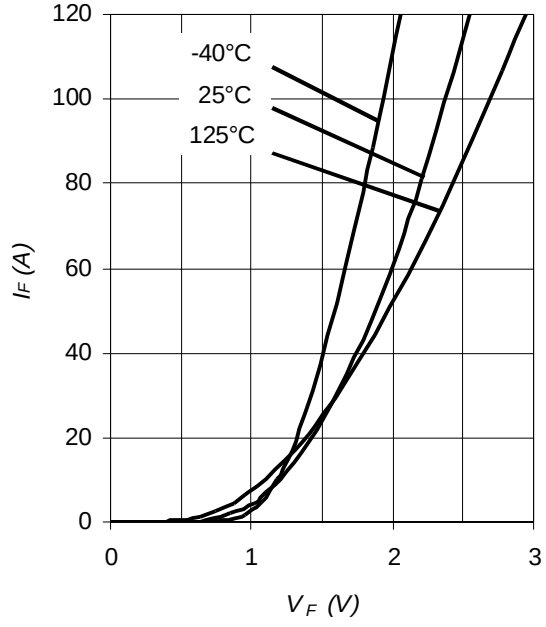

Fig. 3 - Diode Recovery Circuit