

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
 $I_{F(nom)} = 50A$
 $V_{F(typ)} = 1.82V @ I_{F(nom)} @ 25^\circ C$
 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	$I_C = 10A, T_J = 25^\circ C$
BV_R	Reverse Breakdown Voltage	1200V min	$T_J = 25^\circ C, I_R = 500\mu A$
I_{RM}	Reverse Leakage Current	20 μA max	$T_J = 25^\circ C, V_R = 1200V$

Mechanical Data

Nominal Backmetal Composition, (Thickness)	Cr- Ni - Ag, (1kA - 4kA - 6kA)
Nominal Front Metal Composition, (Thickness)	99% Al/1% Si, (3 μm)
Dimensions	0.195" x 0.340"
Wafer Diameter	125mm, with std. < 100 > flat
Wafer Thickness, Tolerance	310 μm , +/-15 μm
Relevant Die Mechanical Dwg. Number	01 - 5550
Minimum Street Width	100 μm
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 $^\circ C$

Die Outline

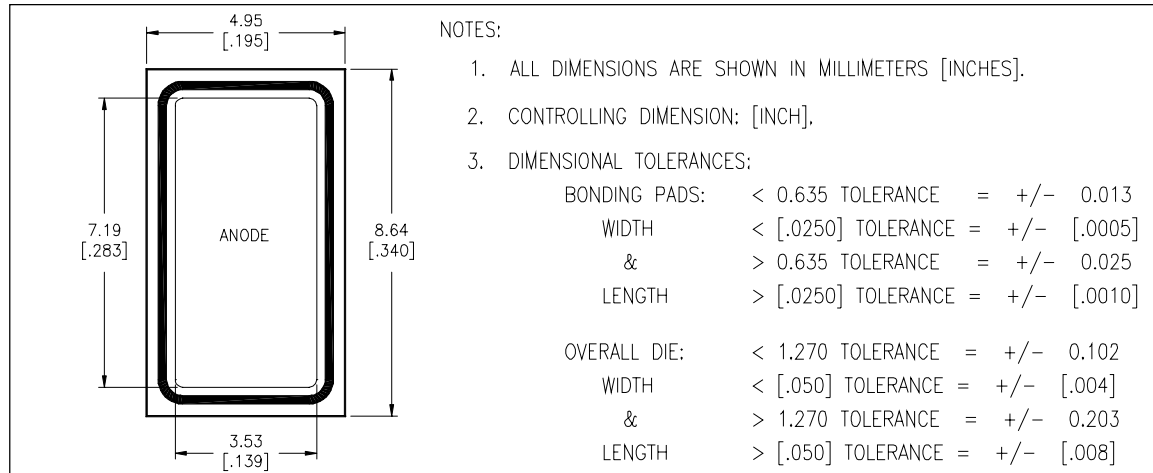


Fig.1 - Typical Diode Recovery

$V_{CC} = 600V$; $R_g = 4.7 \Omega$; $T_J = 125^\circ C$;
 $L = 200\mu H$; Driver = IRGPS60B120KD

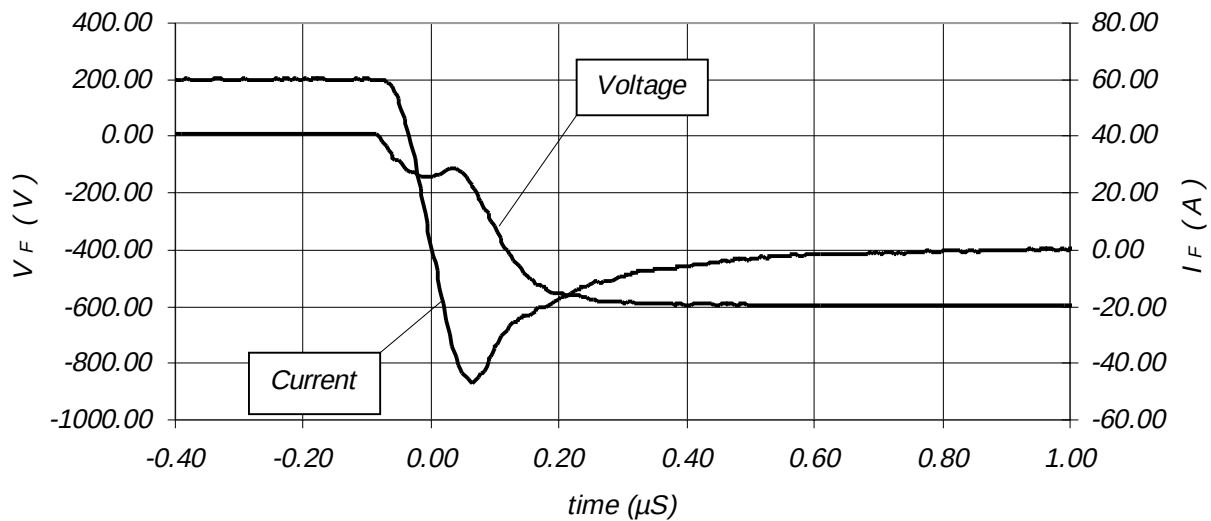


Fig.2 - Typ. Diode Forward Characteristics
 $t_p = 80\mu s$

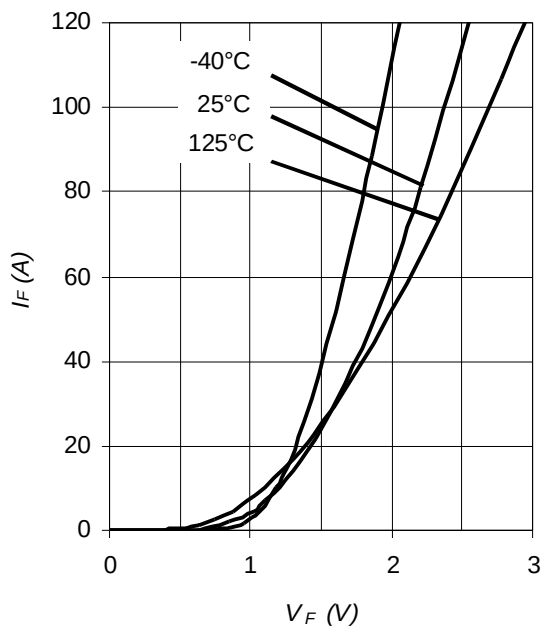


Fig. 3 - Diode Recovery Circuit

