HFD1040D

FEATURES

✧Hyper fast recovery time
✧Soft recovery characteristics
✧Low forward voltage
✧Low stored charge
✧Low leakage current
✧Low recovery loss
✧High junction temperature
✧Epitaxial planar construction

MACHANICAL DATA

✧Case: TO-252 outline plastic package
✧Terminal: Matte tin plated, solderable per
  MIL-STD-750, Method 2026
✧Molding Compound Flammability Rating:UL94-0
✧High temperature soldering guaranteed:
  260°C /10second

ORDERING INFORMATION

✧Device: HFD10G40D
✧Package: TO-252
✧Marking: As marked
✧Material: RoHS compliant
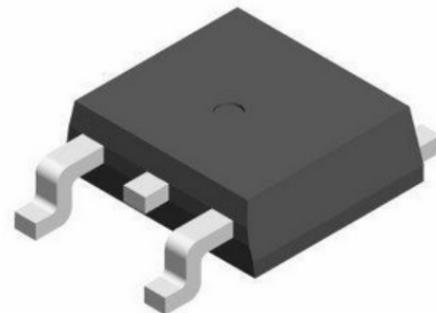✧Packing: Tape and Reel
✧Minimum packing Quantity :
  2,500pcs per reel

APPLICATIONS

✧Switching mode power supply
✧Motor control
✧Inverters, Converters
✧Freewheeling, Snubber, PFC circuits
✧Polarity protection

SYMBOL

PACKAGE OUTLINE
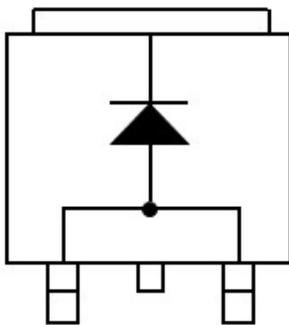
Hyper Fast Recovery Diode

ABSOLUTE MAXIMUM RATING (Tamb=25°C, unless otherwise specified)

Symbol	Parameter	Value	Units
V_{RRM}	DC Blocking Voltage	400	V
$I_{F(AV)}$	Average Forward Current	10	A
I_{FSM}	Peak Forward Surge Current, 8.3ms single half sine-wave	80	A
T_J	Operating Junction Temperature	-55~+175	°C
T_{STG}	Storage Temperature	-55~+150	°C

ELECTRICAL CHARACTERISTICS (Tamb=25°C, unless otherwise specified)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_F	Forward Voltage	I_F = 10A Ta=25°C		1.15	1.40	V
		I_F = 10A Ta=125°C		1.05	1.30	V
V_R	Reverse Breakdown Voltage	I_R = 50µA	400			V
I_R	Reverse Leakage Current	V_R = 400V Ta=25°C			2	µA
		V_R = 400V Ta=125°C			50	µA
T_{rr}	Reverse Recovery Time	I_F = 0.5A, I_R = 1A I_{rr} = 0.25A		21	30	ns
		I_F = 1A, V_R = 30V di/dt = -200A/µs		21		ns

ELECTRICAL CHARACTERISTICS CURVE

Fig 1 Typical Forward Current Derating Curve

Single Phase half wave 60Hz
Resistive or Inductive load

Average Forward Current (A) vs Lead temperature (℃)
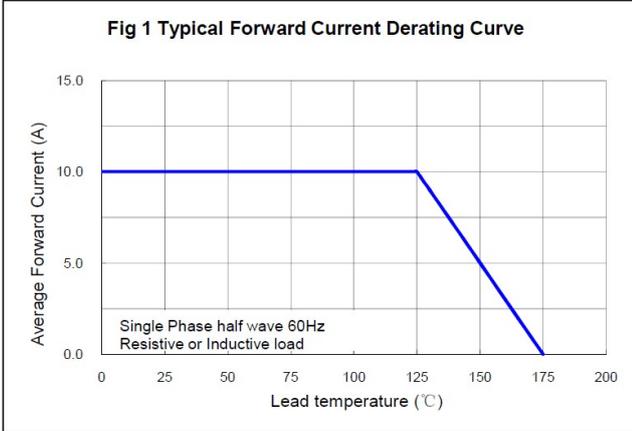
Fig 2 Typical Instantaneous Forward Characteristics

Instantaneous Forward Current (A) vs Instantaneous Forward Voltage (mV)
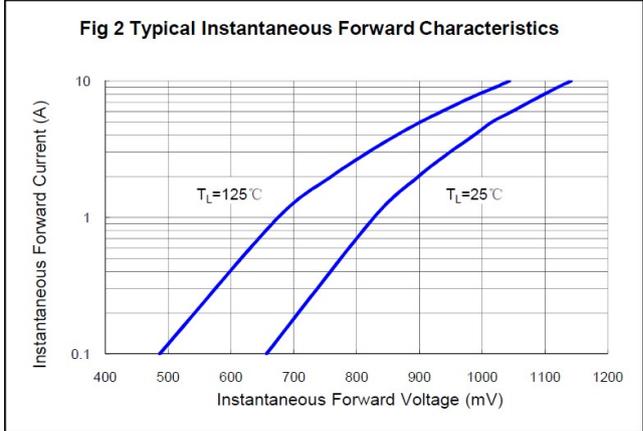
$T_L=125℃$ $T_L=25℃$

Fig 3 Max. Non-repetitive Forward Surge Current

8.3ms Single half sine wave
(JEDEC)

Peak Forward Surge Current(A) vs Numnber of Cycles at 60Hz
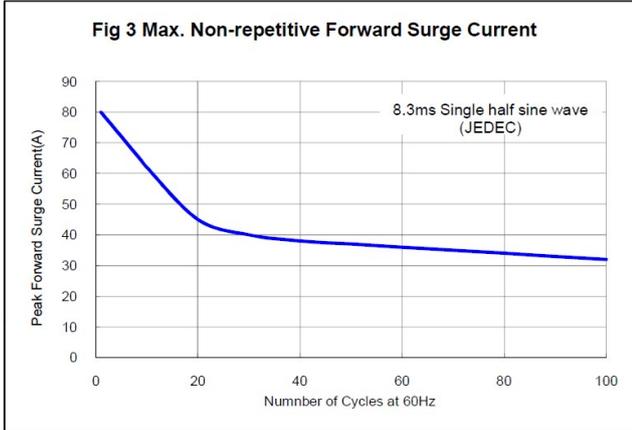
Fig 4 Typical Reverse Characteristics

Instantaneous Reverse Current (μA) vs Percent of Rated Peak Reverse Voltage (%)

$T_L=125℃$

$T_L=25℃$
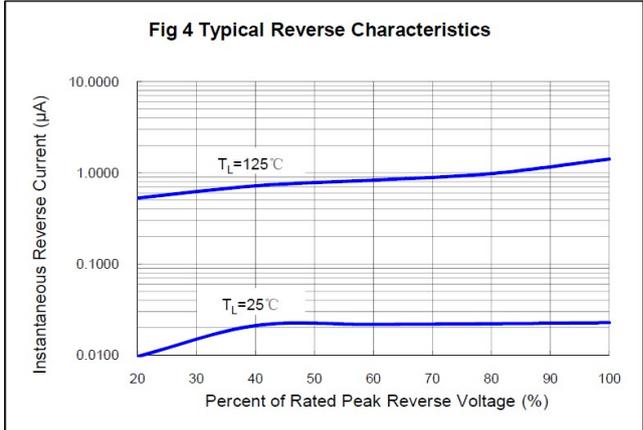
TO-252 PACKAGE OUTLINE DIMENSIONS

(0.30)

6.50 ±0.20

2.30 ±0.20

0.60 ±0.10

1.20 ±0.20

6.00 ±0.20

10.10 ±0.30

0.70 ±0.20

1.40 ±0.10

0.10 ±0.15

1.20 ±0.20

1.30 ±0.20

2.90 ±0.20

(0.75)

0°~3°

1.10 ±0.10

0.80 ±0.10

0.60 ±0.10

2.54TYP

2.54TYP

6.60 ±0.20

6.60 ±0.20

(4.9)

(1.7)

(1.75)

(2×R0.45)

(4.1)

6.00 ±0.20

10.10 ±0.30

2.90 ±0.20

0.80 ±0.10

(Unit：mm）