

**NOT RECOMMENDED FOR NEW DESIGN**  
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# G12U50F4

<b>TRENCH SCHOTTKY RECTIFIER</b>	<p><b>REVERSE VOLTAGE</b> – 50 Volts</p> <p><b>FORWARD CURRENT</b> – 12 Amperes</p>
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**FEATURES**

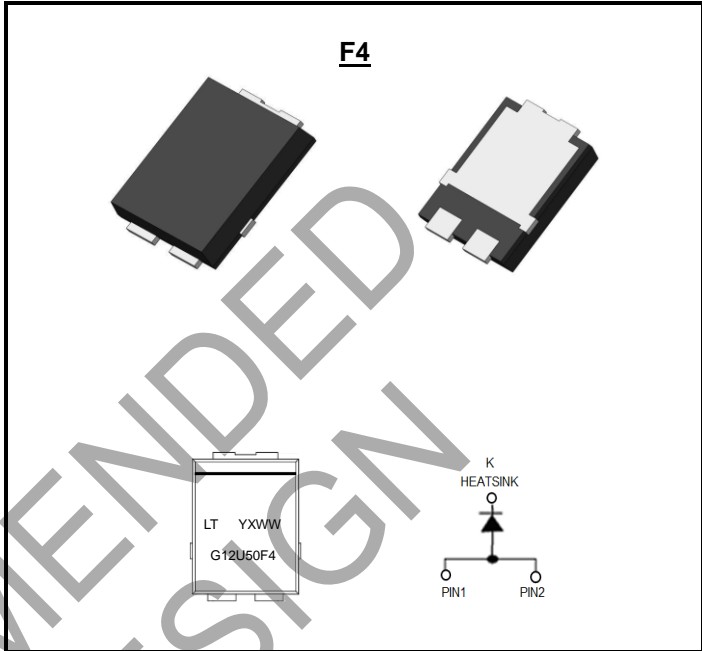
- Rating to 50V PRV
- Ideal for printed circuit board
- Low profile package
- Reliable low cost construction utilizing molded plastic technique
- Qualification is according to AEC-Q101 Rev\_C
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

**APPLICATION**

- DC/DC converters
- Low voltage high frequency inverters

**MECHANICAL DATA**

- Package Material: Molding compound, UL flammability classification 94V- 0, "Halogen-free"
- Polarity Indicator: As marked on body
- Moisture Sensitivity: Level 1 per J-STD-020
- Marking Code: G12U50F4
- Weight: 126mg (Approximate)



**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**  
Ratings at 25°C ambient temperature unless otherwise specified.

**ABSOLUTE RATINGS**

PARAMETER	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	V
Maximum DC blocking voltage	$V_{DC}$	50	V
Maximum average rectified forward current	$I_F$	12	A
Peak forward surge 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	260	A
Junction operating and storage temperature range	$T_J, T_{STG}$	-55 to +150	°C

**STATIC ELECTRICAL CHARACTERISTICS**

PARAMETER	TEST CONDITION	SYMBOL	TYP	MAX	UNIT
Forward voltage (Note 4)	$I_F=2A$ $I_F=12A$ $T_J=25^\circ C$	$V_F$	0.35	--	V
	$I_F=2A$ $I_F=12A$ $T_J=125^\circ C$		0.44	0.50	
	$I_F=2A$ $I_F=12A$ $T_J=25^\circ C$		0.23	--	
	$I_F=2A$ $I_F=12A$ $T_J=125^\circ C$		0.38	0.48	
Reverse leakage current	$V_R=50V$ $T_J=25^\circ C$	$I_R$	--	300	$\mu A$
	$T_J=125^\circ C$		30	100	mA
Typical junction capacitance (Note 5)		$C_j$	750		pF

**THERMAL CHARACTERISTICS**

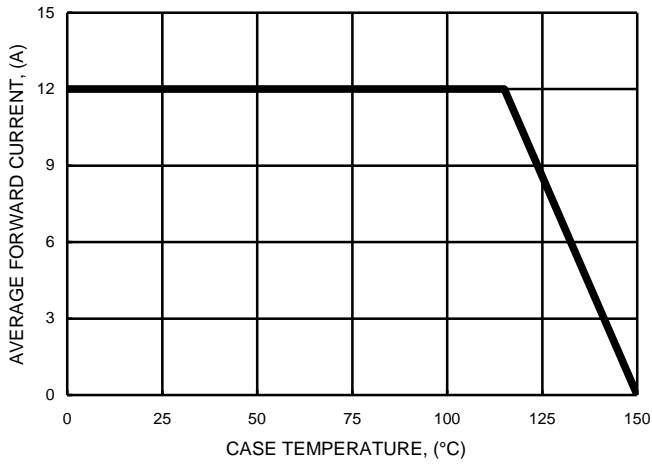
PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Note 6)	$R_{thJC}$	3	°C/W
	$R_{thJL}$	16	

- Notes:**
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
  2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. 300us pulse width, 2% duty cycle.
  5. Measured at 1.0MHz and reverse voltage of 4.0V DC.
  6. Thermal resistance test is performed in accordance with JESD-51.

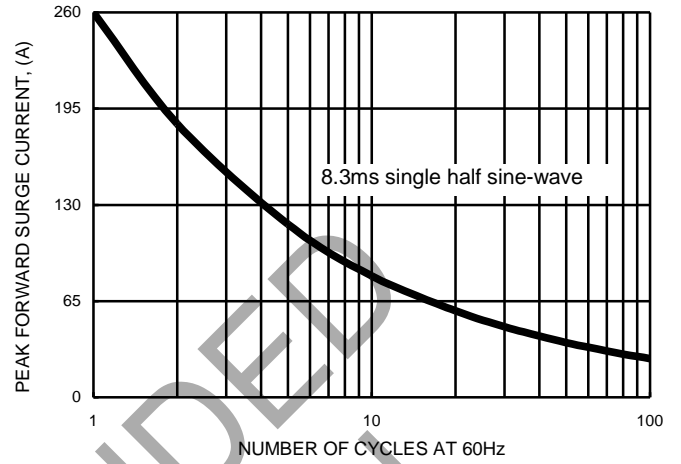
**RATING AND CHARACTERISTIC CURVES**

**G12U50F4**

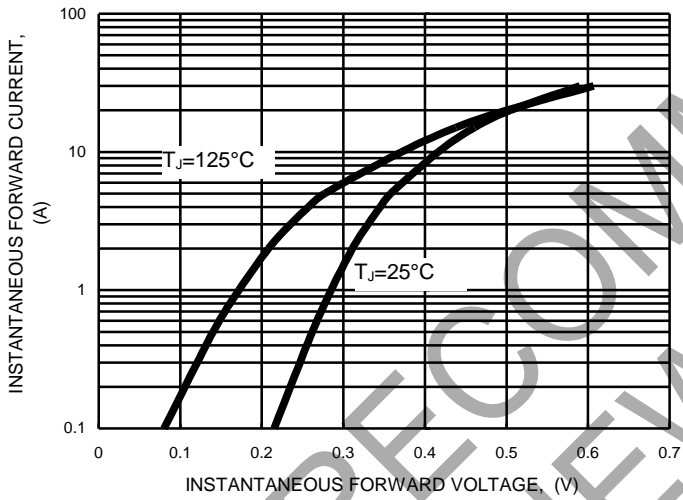
**FIG.1- FORWARD CURRENT DERATING CURVE**



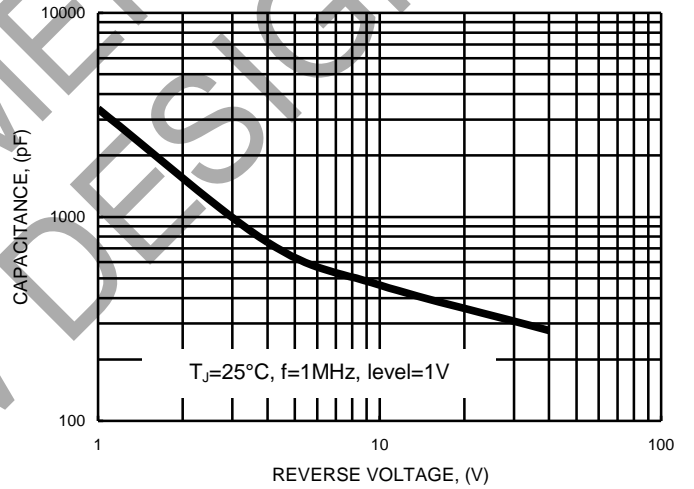
**FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT**



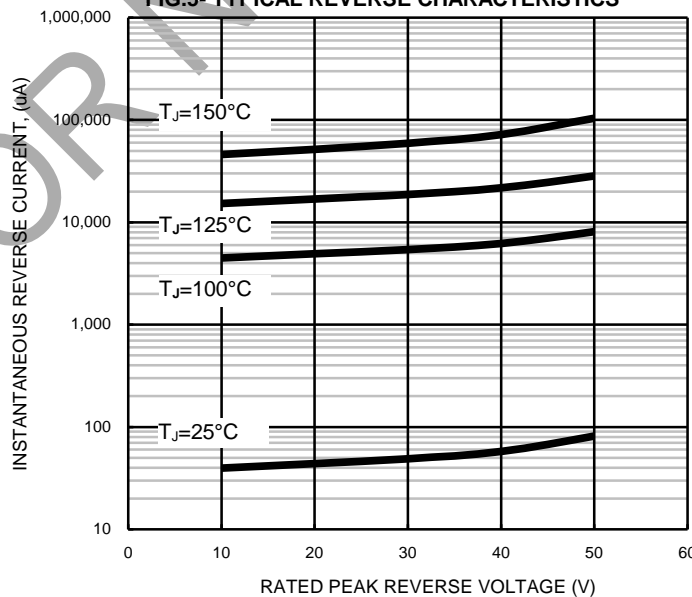
**FIG.3- TYPICAL FORWARD CHARACTERISTICS**



**FIG.4- TYPICAL JUNCTION CAPACITANCE**

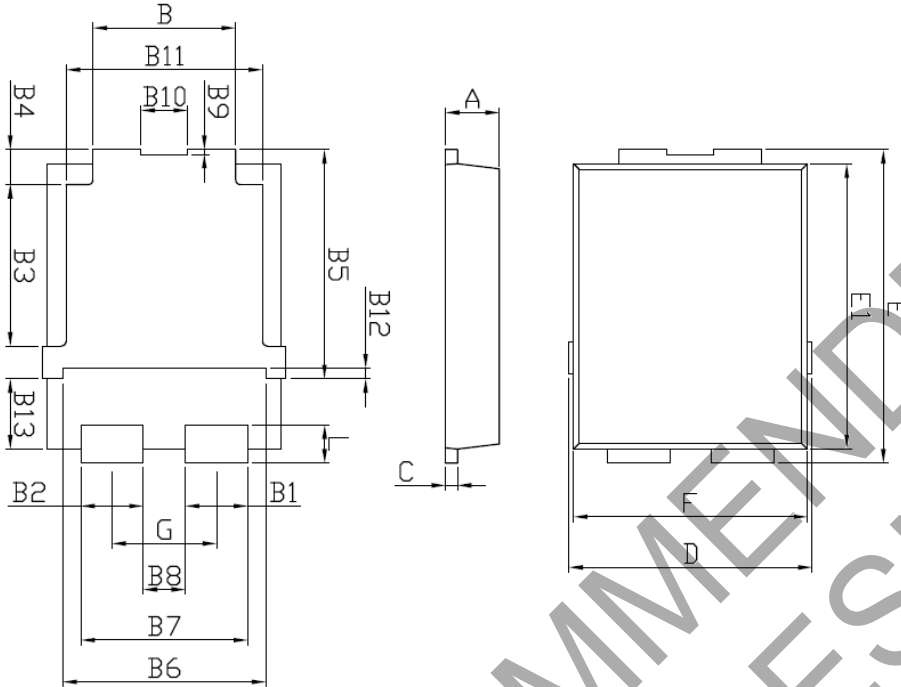


**FIG.5- TYPICAL REVERSE CHARACTERISTICS**



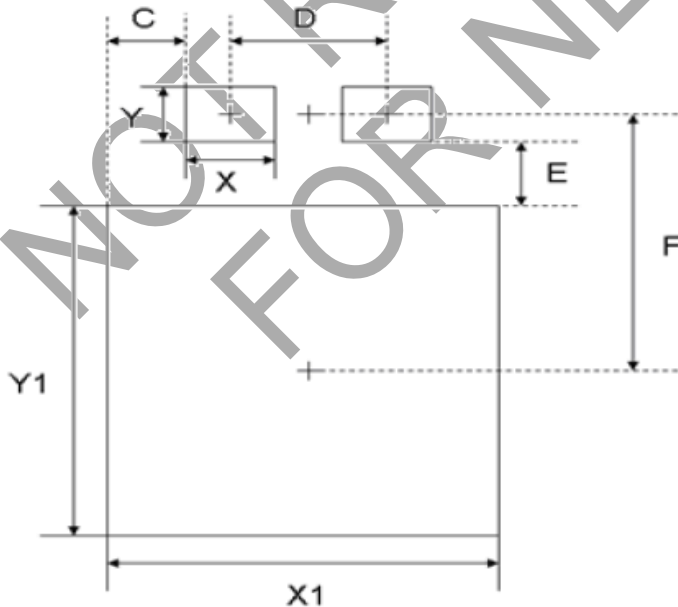
**MECHANICAL INFORMATION**  
**G12U50F4**

**Package Dimensions:**



F4			
DIM.	MIN.	TYP.	MAX
A	1.05	1.15	1.25
B	2.90	3.05	3.20
B1	1.20	1.34	1.50
B2	1.20	1.34	1.50
B3	3.30	3.45	3.60
B4	0.60	0.75	0.90
B5	4.75	4.90	5.05
B6	4.19	4.34	4.49
B7	3.42	3.58	3.72
B8	0.72	0.90	1.08
B9	0.02	0.10	0.20
B10	0.85	1.00	1.15
B11	4.05	4.20	4.35
B12	0.08	0.23	0.38
B13	1.30	1.50	1.70
C	0.15	0.25	0.35
D	5.05	5.20	5.35
E	6.55	6.70	6.85
E1	5.95	6.10	6.25
F	4.85	5.00	5.15
G	2.10	2.24	2.40
L	0.68	0.82	1.00
All dimension in millimeter			

**Soldering Pad Layout:**

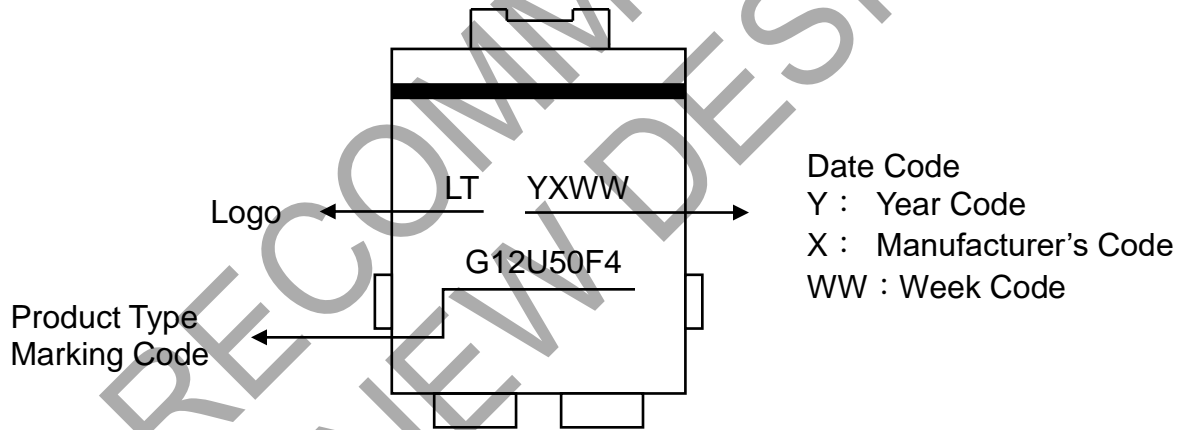


DIM.	MILLIMETERS	INCHES.
C	0.7725	0.0304
D	2.2250	0.0876
E	0.4350	0.0171
F	3.8000	0.1496
X	1.7300	0.0681
X1	5.5000	0.2165
Y	1.4300	0.0562
Y1	5.3000	0.2087

**Ordering Information:**

Part Number	Package	Packing	
		Qty.	Carrier
G12U50F4	F4	4000 pcs	Tape & Reel

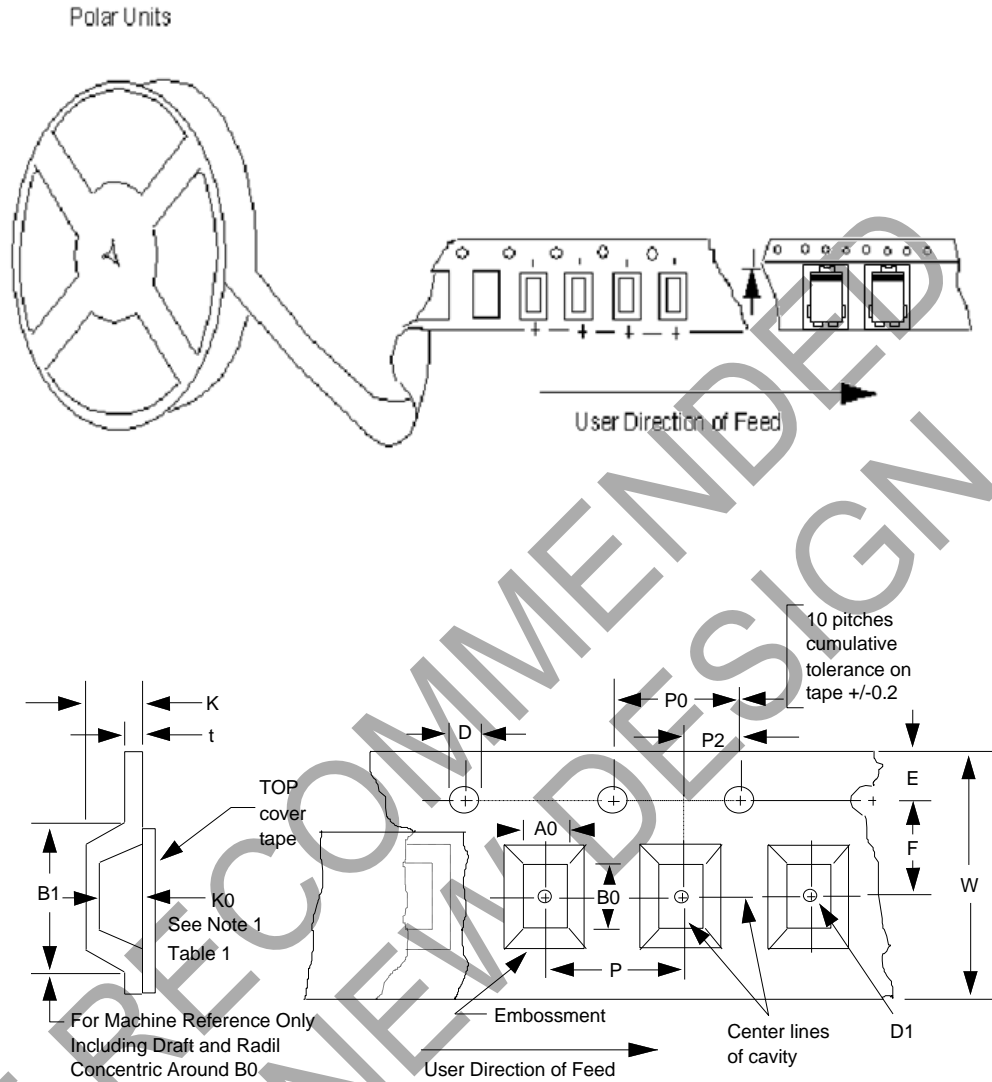
**Marking Information:**



**TAPE AND REEL INFORMATION**

**G12U50F4**

**Embossed Carrier Dimensions:**



UNIT: mm

TAPE SIZE	D	E	P0	t (MAX)	A0	B0	K0
16mm	1.55+/-0.05	1.75+/-0.10	4.0+/-0.10	0.35	5.5+/-0.1	6.95+/-0.1	1.4+/-0.1
	B1 (MAX)	D1 (MIN)	F	K (MAX)	P2	W	P
	7.05	1.5	7.5+/-0.1	1.75	2.0+/-0.1	16.0+/-0.30	8.0+/-0.1

**PACKAGING INFORMATION****G12U50F4****Packing Information:**

DEVICE	Q'TY/REEL (PCS)	REEL DIA. (INCH)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)
G12U50F4	4000	13	4000	48K

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