NEW PRODUCT

DFLS120L

1.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

PowerDI ä 123

Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- **Lead Free Finish, RoHS Compliant (Note 4)**
- **"Green" Molding Compound (No Br, Sb)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: PowerDI ä 123
- Case Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: Cathode Band
- Terminals: Finish – Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 (e3)
- Marking & Type Code Information: See Last Page
- Weight: 0.01 grams (approx.)
- Ordering Information: See Last Page

TOP VIEW

BOTTOM VIEW

Maximum Ratings @ T_A = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	20	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	V
Average Forward Current	$I_{F(AV)}$	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	50	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1) @ T_A = 25°C	P_D	1.67	W
Power Dissipation (Note 2) @ T_A = 25°C	P_D	556	mW
Thermal Resistance Junction to Ambient (Note 1)	$R_{\theta JA}$	60	°C/W
Thermal Resistance Junction to Ambient (Note 2)	$R_{\theta JA}$	180	°C/W
Thermal Resistance Junction to Soldering (Note 3)	$R_{\theta JS}$	10	°C/W
Operating Temperature Range	T_j	-55 to +125	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Notes:
1. Part mounted on 50.8mm X 50.8mm GETEK board with 25.4mm X 25.4mm copper pad, 25% anode, 75% cathode.
2. Part mounted on FR-4 board with 1.8mm X 2.5mm cathode and 1.8mm X 1.2mm anode, 1 oz. copper pads.
3. Theoretical $R_{\theta JS}$ calculated from the top center of the die straight down to the PCB/cathode tab solder junction.
4. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7.*

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Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 5)	$V_{(BR)R}$	20	¾	¾	V	I_R = 1.0mA
Forward Voltage	V_F	¾ ¾ ¾	0.20 0.30 0.32	¾ ¾ 0.36	V	I_F = 0.1A I_F = 0.7A I_F = 1.0A
Leakage Current (Note 5)	I_R	¾ ¾	0.26 ¾	¾ 1.0	mA	V_R = 5V, T_A = 25°C V_R = 20V, T_A = 25°C
Total Capacitance	C_T	¾	75	¾	pF	V_R = 10V, f = 1.0MHz

Notes: 5. Short duration pulse test to minimize self-heating effect.

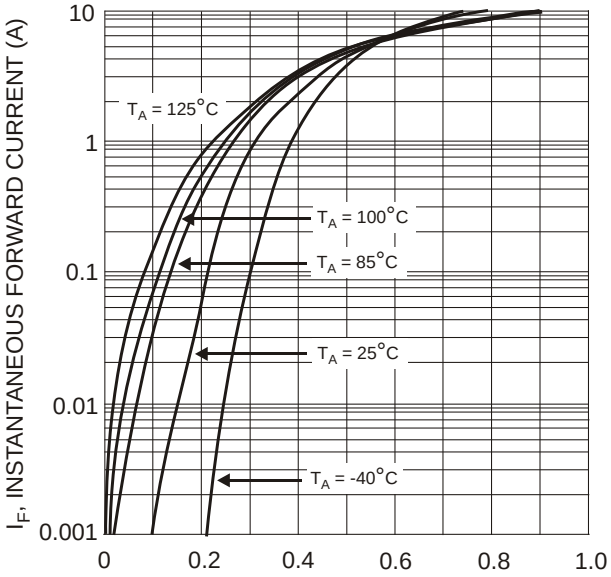

Fig. 1, Typical Forward Characteristics

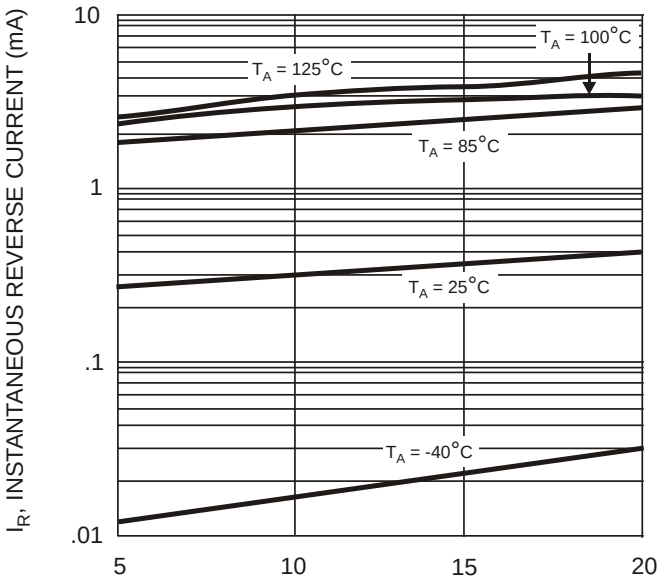

Fig. 2, Typical Reverse Characteristics

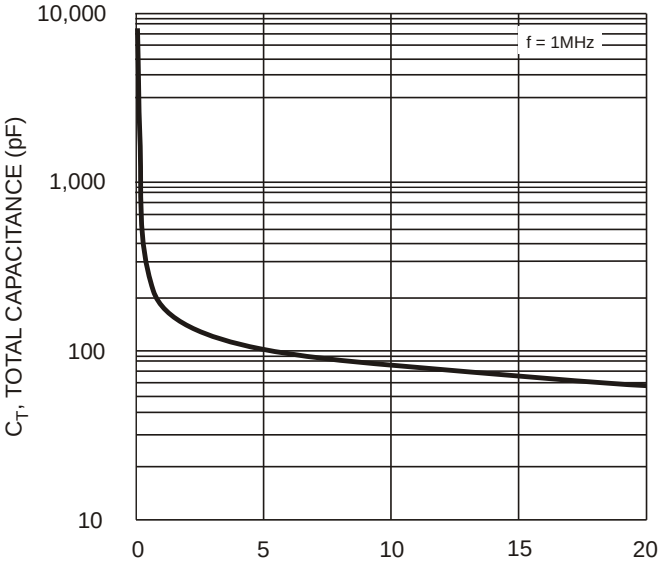

Fig. 3, Typical Total Capacitance

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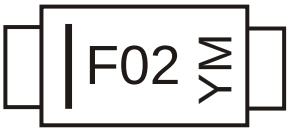
Ordering Information (Note 6)

Device	Packaging	Shipping
DFLS120L-7	PowerDI®123	3000/Tape & Reel

Notes: 6. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



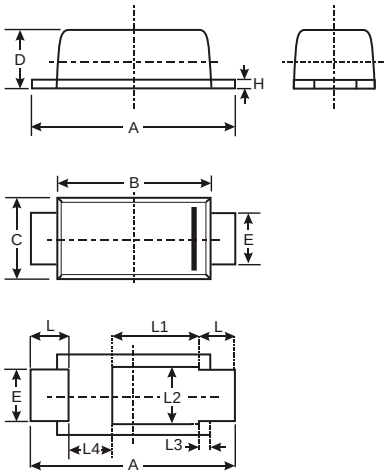
F02 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: P = 2003)
M = Month (ex: 9 = September)

Date Code Key

Year	2003	2004	2005	2006	2007	2008	2009
Code	P	R	S	T	U	V	W

Month	Jan	Feb	March	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Package Outline Dimensions



PowerDI®123			
Dim	Min	Max	Typ
A	3.50	3.90	3.70
B	2.60	3.00	2.80
C	1.63	1.93	1.78
D	0.93	1.00	0.98
E	0.85	1.25	1.00
H	0.15	0.25	0.20
L	0.45	0.85	0.65
L1	—	—	1.35
L2	—	—	1.10
L3	—	—	0.20
L4	0.90	1.30	1.05
All Dimensions in mm			