TAYCHIPST

Surface Mount Ultrafast Plastic Rectifier

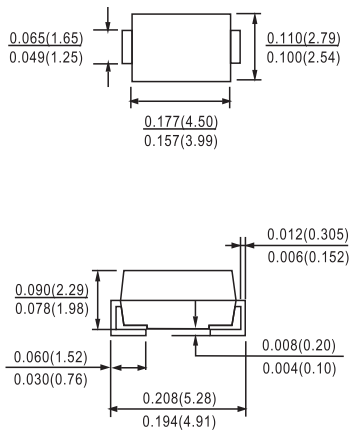
U1B THRU U1D

100V-200V 1.0A

FEATURES

- Oxide planar chip junction
- Ultrafast recovery time
- Low forward voltage, low power losses
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

DO-214AC(SMA)



Dimensions in inches and (millimeters)

Mechanical Data

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- Ultrafast recovery time
- Low forward voltage, low power losses
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MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	U1B	U1C	U1D	UNIT
Device marking code		U1B	U1C	U1D	
Maximum repetitive peak reverse voltage	V_{RRM}	100	150	200	V
Maximum average forward rectified current (Fig. 1)	$I_{F(AV)}$	1.0			A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30			A
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150			°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage (1)	I_F = 0.6 A I_F = 1.0 A	T_A = 25 °C	V_F	0.82 0.87	0.87 0.92	V
	I_F = 0.6 A I_F = 1.0 A	T_A = 100 °C		0.71 0.76	0.78 0.84	
Reverse current (2)	rated V_R	T_A = 25 °C T_A = 100 °C	I_R	- 55	5.0 100	µA
Reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	T_A = 25 °C	t_{rr}	-	15	ns
	I_F = 0.6 A, dI/dt = 50 A/µs, V_R = 30 V, I_{rr} = 0.1 I_{RM}	T_A = 25 °C T_A = 100 °C	t_{rr}	24 29	- -	ns
Storage charge	I_F = 0.6 A, dI/dt = 50 A/µs, V_R = 30 V, I_{rr} = 0.1 I_{RM}	T_A = 25 °C T_A = 100 °C	Q_{rr}	7 13	- -	nC
Typical junction capacitance	4.0 V, 1 MHz		C_J	6.8	-	pF

RATINGS AND CHARACTERISTIC CURVES U1B THRU U1D

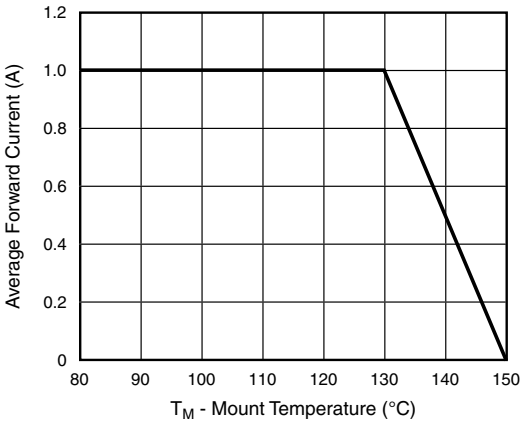


Figure 1. Forward Derating Curve

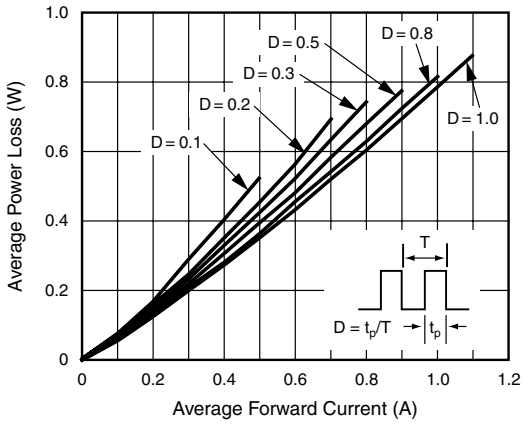


Figure 2. Forward Power Loss Characteristics

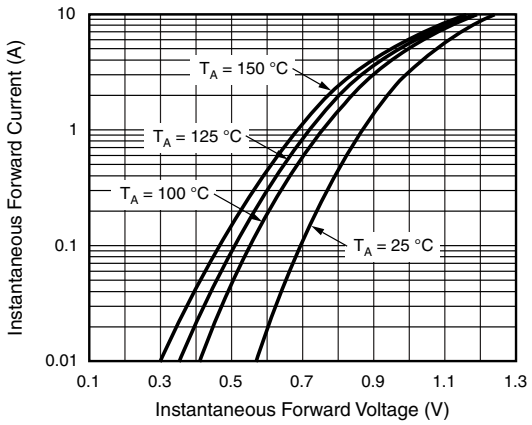


Figure 3. Typical Instantaneous Forward Characteristics

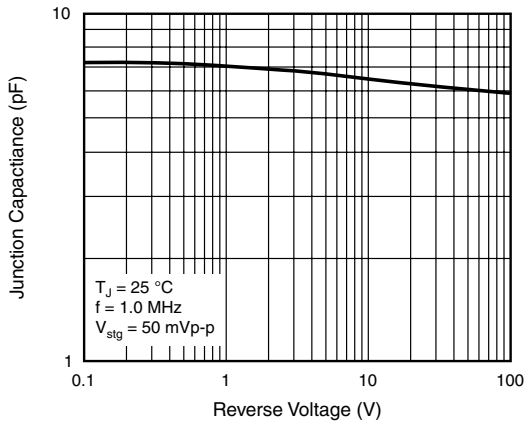


Figure 5. Typical Junction Capacitance

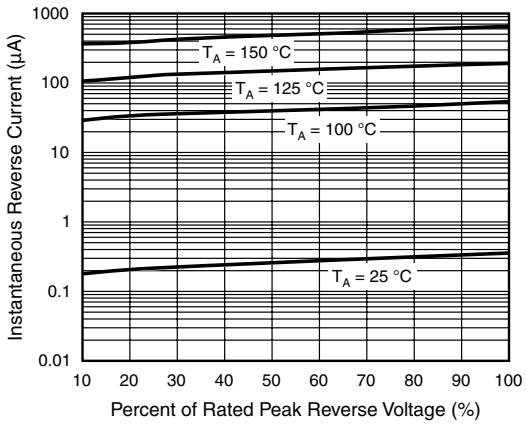


Figure 4. Typical Reverse Characteristics

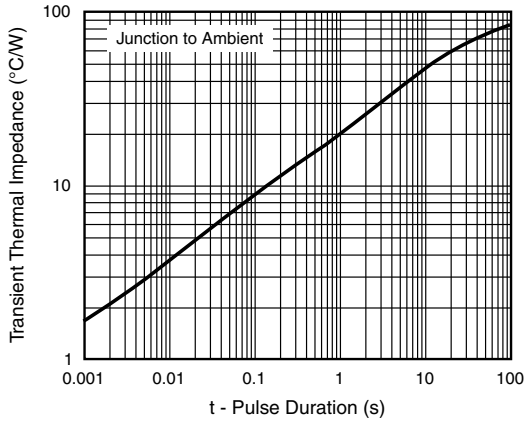


Figure 6. Typical Transient Thermal Impedance