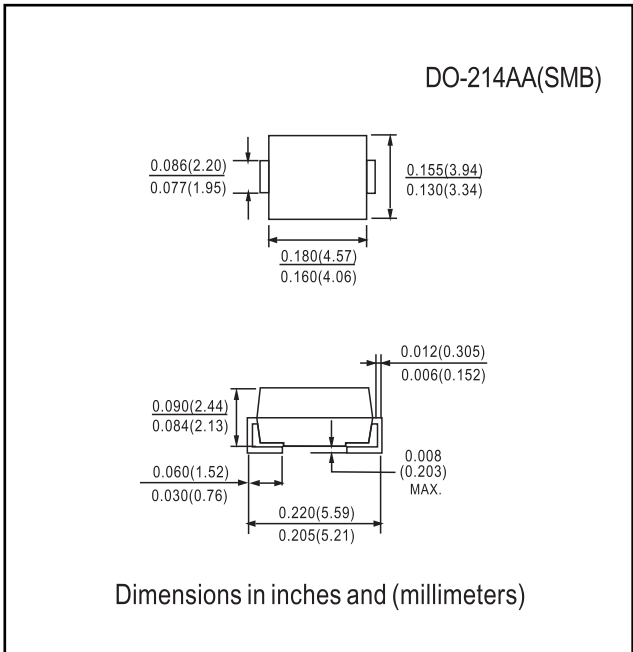




<b>USB260</b>
600V 2.0A

- FEATURES**
- Glass passivated chip junction
  - Ideal for automated placement
  - Ultrafast recovery times for high efficiency
  - Low forward voltage, low power losses
  - High forward surge capability
  - Meets MSL level 1, per J-STD-020C
  - Solder Dip 260 °C, 40 seconds
  - Component in accordance to RoHS 2002/95/EC and WEE 2002/96/EC



**Mechanical Data**

**Case:** DO-214AA (SMB)  
 Epoxy meets UL 94V-0 flammability rating  
**Terminals:** Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D  
 E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)  
**Polarity:** Color band denotes cathode end

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

**Maximum Ratings** (T<sub>A</sub> = 25 °C unless otherwise specified)

Parameters	Symbol	USB260	Unit
Device marking code		U60	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	600	V
Maximum RMS voltage	V <sub>RMS</sub>	420	V
Maximum DC blocking voltage	V <sub>DC</sub>	600	V
Maximum average forward rectified current (see Fig. 1)	I <sub>F(AV)</sub>	2.0	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	90	A
Non-repetitive avalanche energy at I <sub>AS</sub> = 2.0 A, L = 10 mH, T <sub>J</sub> = 25 °C	E <sub>AS</sub>	20	mJ
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	- 55 to + 150	°C

**Electrical Characteristics** (T<sub>A</sub> = 25 °C unless otherwise specified)

Parameters	Test condition	Symbol	Typ.	Max.	Unit
Breakdown voltage	at I <sub>R</sub> = 10 μA T <sub>J</sub> = 25 °C	V <sub>(BR)</sub>	600 (minimum)		V
Instantaneous forward voltage <sup>(1)</sup>	at I <sub>F</sub> = 1 A T <sub>J</sub> = 25 °C	V <sub>F</sub>	1.25	-	V
	at I <sub>F</sub> = 2.0 A T <sub>J</sub> = 25 °C T <sub>J</sub> = 125 °C		1.5 1.0	1.6 1.1	
Maximum reverse current <sup>(1)</sup>	at V <sub>R</sub> = 600 V T <sub>J</sub> = 25 °C T <sub>J</sub> = 125 °C	I <sub>R</sub>	- 30	5.0 100	μA
Maximum reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A	t <sub>rr</sub>	30		ns
Typical junction capacitance	at 4.0 V, 1 MHz	C <sub>J</sub>	45		pF

**Thermal Characteristics** (T<sub>A</sub> = 25 °C unless otherwise specified)

Parameters	Symbol	USB260	Unit
Typical thermal resistance <sup>(1)</sup>	R <sub>θJA</sub>	45	°C/W
	R <sub>θJL</sub>	10	

Notes: (1) Units mounted on P.C.B. with 2.0 x 2.0" copper pad areas

**RATINGS AND CHARACTERISTIC CURVES    USB260**

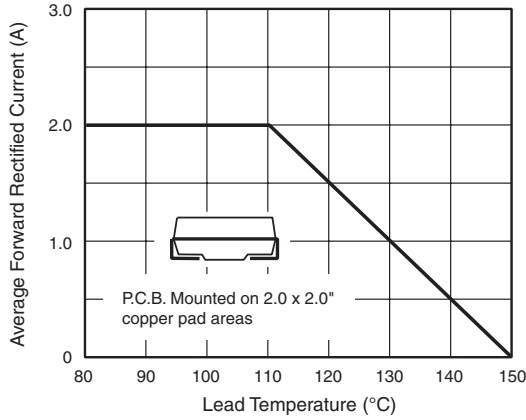


Figure 1. Maximum Forward Current Derating Curve

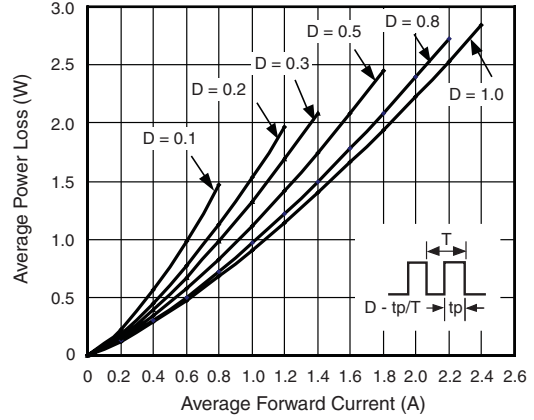


Figure 2. Forward Power Loss Characteristics

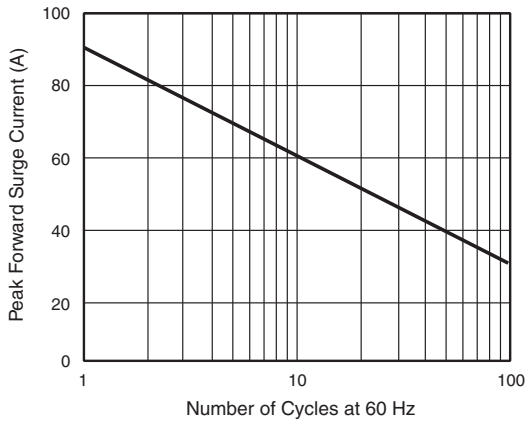


Figure 3. Maximum Non-Repetitive Peak Forward Surge Current

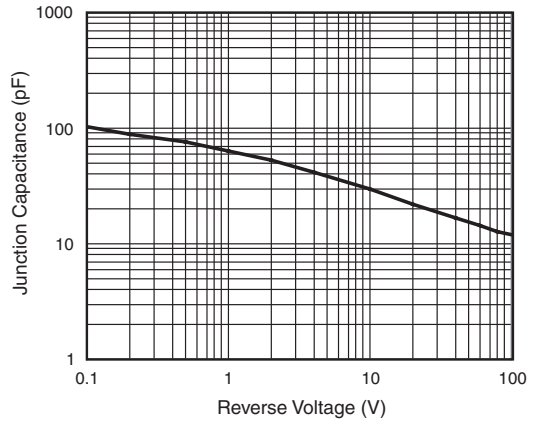


Figure 6. Typical Junction Capacitance

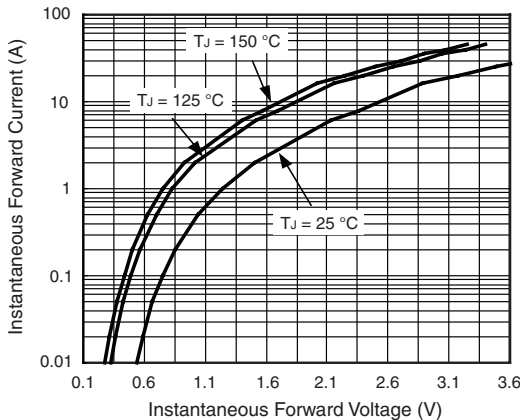


Figure 4. Typical Instantaneous Forward Characteristics

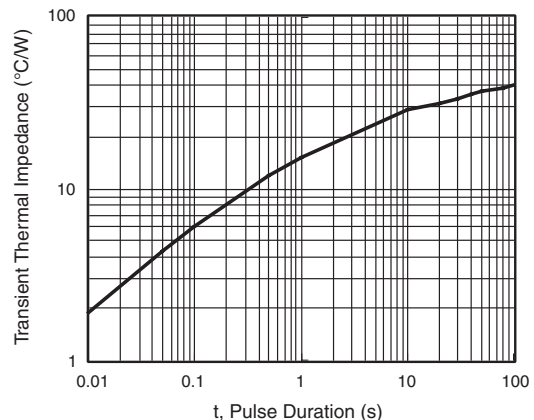


Figure 7. Typical Transient Thermal Impedance