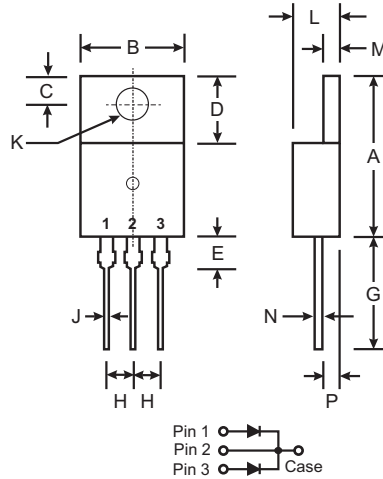


Features

- Low Power Loss, High Efficiency
- Guard Ring for Transient Protection
- High Surge Capability
- Very Low Forward Voltage Drop
- For Use in High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- **Lead Free Finish, RoHS Compliant (Note 1)**

Mechanical Data

- Case: TO-220AB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Tin Finish. Solderable per MIL-STD-202, Method 208 (e3)
- Polarity: See Diagram
- Marking: Type Number
- Ordering Information: See Sheet 3
- Weight: 2.24 grams (approximate)



TO-220AB		
Dim	Min	Max
A	14.22	15.88
B	9.65	10.67
C	2.54	3.43
D	5.84	6.86
E	—	6.35
G	12.70	14.73
H	2.29	2.79
J	0.51	1.14
K	3.53 \varnothing	4.09 \varnothing
L	3.56	4.83
M	1.14	1.40
N	0.30	0.64
P	2.03	2.92
All Dimensions in mm		

Maximum Ratings @ $T_A = 25^\circ\text{C}$ 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	V_{RRM}	30	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_R		
RMS Reverse Voltage	$V_{R(RMS)}$	21	V
Average Rectified Output Current @ $T_C = 140^\circ\text{C}$	I_o	30	A
Total Device Per Element		15	
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load Per Element	I_{FSM}	260	A
Peak Repetitive Reverse Current Per Element at $t_p = 2\mu\text{s}$, 1 KHz	I_{RRM}	1.0	A
Voltage Rate of Change	dV/dt	10,000	V/ μs
Typical Thermal Resistance Junction to Case (Note 2)	$R_{\theta JC}$	1.5	$^\circ\text{C/W}$
Per Diode Total		0.8	
Operating Temperature Range	T_j	-65 to +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65 to +150	$^\circ\text{C}$

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 3)	$V_{(BR)R}$	30	—	—	V	$I_R = 1.5\text{mA}$
Forward Voltage Per Element	V_F	—	—	0.46	V	@ $I_F = 15\text{A}$, $T_j = 25^\circ\text{C}$
		—	—	0.38		@ $I_F = 15\text{A}$, $T_j = 125^\circ\text{C}$
		—	0.52	0.57		@ $I_F = 30\text{A}$, $T_j = 25^\circ\text{C}$
		—	—	0.50		@ $I_F = 30\text{A}$, $T_j = 125^\circ\text{C}$
Peak Reverse Current Per Element (Note 3)	I_R	—	—	1.0	mA	@ $V_R = 30\text{V}$, $T_j = 25^\circ\text{C}$
				300		@ $V_R = 30\text{V}$, $T_j = 125^\circ\text{C}$

- Notes:
1. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex, Notes 5 and 7*.
 2. Thermal Resistance Junction to Case: Device mounted on 200x200x5mm aluminum plate.
 3. Short duration test pulse used to minimize self-heating effect.

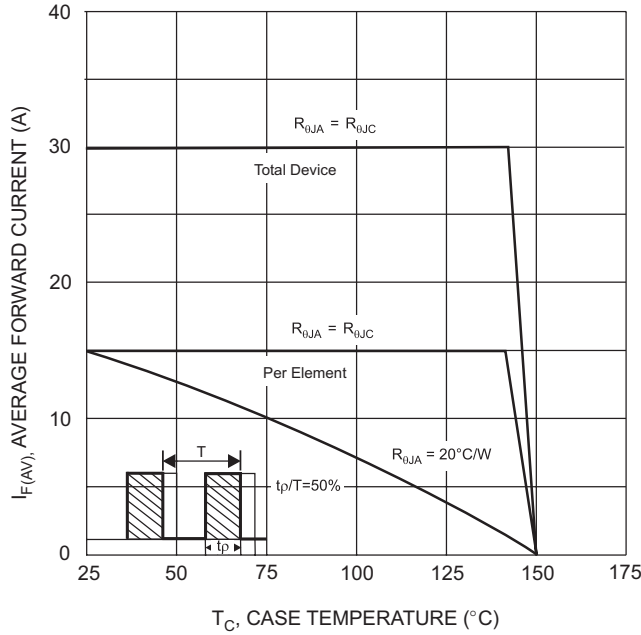


Fig. 1 Forward Current Derating Curve

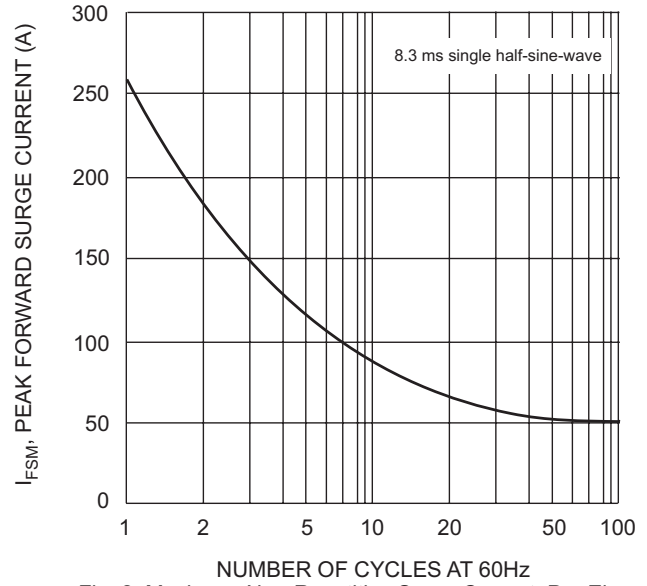


Fig. 2 Maximum Non-Repetitive Surge Current, Per Element

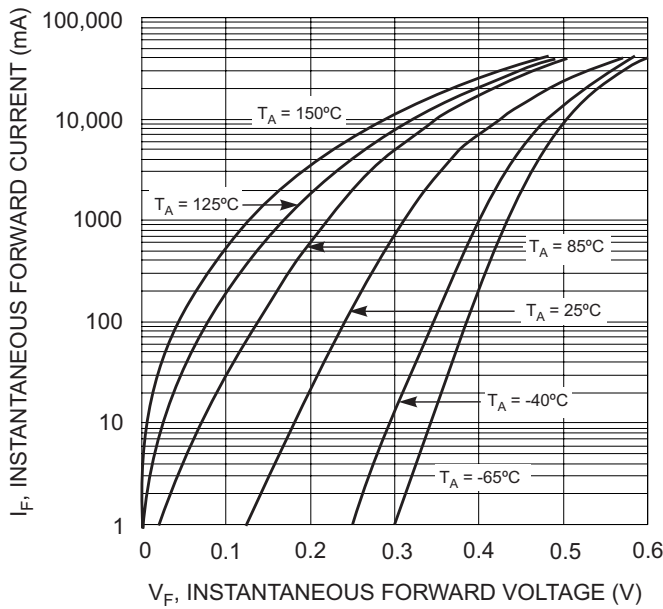


Fig. 3 Typical Forward Characteristics, Per Element

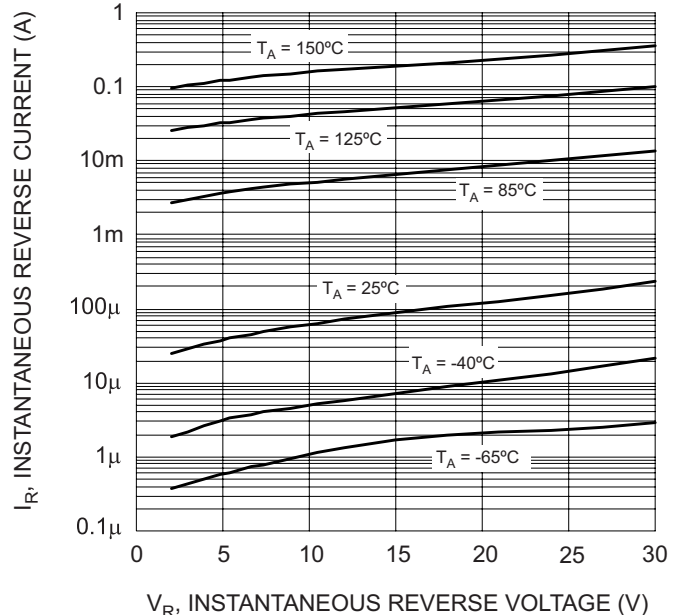


Fig. 4 Typical Reverse Characteristics, Per Element

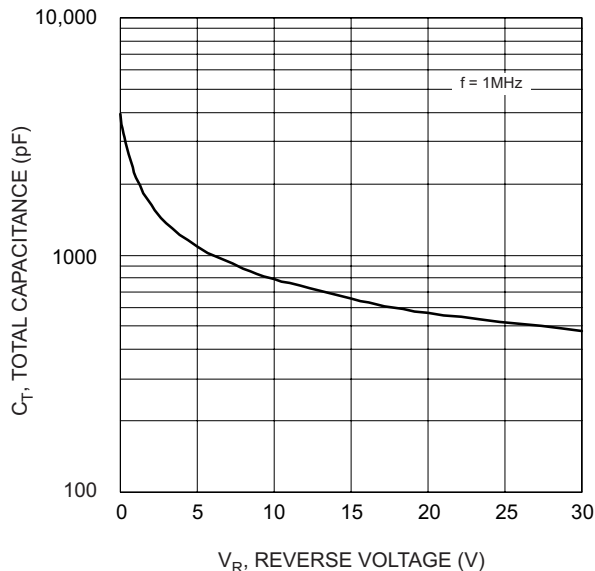


Fig. 5 Typical Total Capacitance, Per Element

Ordering Information (Note 4)

Device	Packaging	Shipping
SBL30L30CT	TO-220AB	50/Tube

Notes: 4. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

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