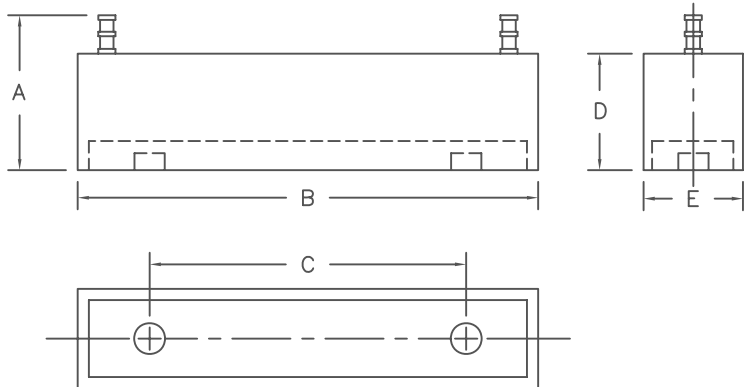


# High Voltage Stacks

688-10 to 688-25 & 688-10R to 688-25R



Dim.	Inches	Millimeter
A	1.140 MAX.	28.96 MAX.
B	2.985-3.015	75.82-76.58
C	2.110-2.140	53.59-54.36
D	.740-.770	18.80-19.56
E	.720-.750	18.29-19.05

Add suffix R to denote Fast Recovery version. For example, for recovery time,  $t_{rr} = 500\text{nS}$ ; order 688-10R.

## MARKING:

Cathode Positive Output: +  
Anode Negative: -  
Part number is printed on the body.

Microsemi Catalog Number	Working Peak Reverse Voltage	DC Output Current
688-10, 688-10R	10kV	0.60A
688-12, 688-12R	12kV	0.50A
688-15, 688-15R	15kV	0.40A
688-18, 688-18R	18kV	0.35A
688-20, 688-20R	20kV	0.30A
688-25, 688-25R	25kV	0.20A

- Current ratings to 0.6A
- $V_{RRM}$  10kV to 25kV
- Only fused-in-glass diodes used
- 150°C junction temperature
- Surge ratings to 20A
- Controlled avalanche characteristics
- MIL-PRF-19500 Similarity
- Sn/Pb terminations

## Electrical Characteristics

	688-10,R	688-12,R	688-15,R	688-18,R	688-20,R	688-25,R
Maximum DC output current— $T_C = 100^\circ\text{C}$	$I_O$ 0.60A	0.50A	0.40A	0.35A	0.30A	0.20A
Maximum surge current— $T_C = 25^\circ\text{C}$	$I_{FSM}$ 20A	20A	20A	20A	20A	20A
Maximum peak reverse voltage	$V_{RM}$ 10kV	12kV	15kV	18kV	20kV	25kV
Max peak forward voltage @ 25°C	$V_{FM}$ 17V @ 0.4A*	20V @ 0.4A*	25V @ 0.4A*	30V @ 0.4A*	34V @ 0.4A*	42V @ 0.4A*
Max peak reverse current @ 25°C, at $V_{RRM}$	$I_{RM}$ 2uA	2uA	2uA	2uA	2uA	2uA
Max peak reverse current @ 100°C, at $V_{RRM}$	$I_{RM}$ 100uA	100uA	100uA	100uA	100uA	100uA
Max. recovery time 10, 10, 5mA (R types)	$t_{rr}$ 500nS	500nS	500nS	500nS	500nS	500nS

\*Pulse test: Pulse width 300  $\mu\text{sec}$ , Duty cycle 2%

## Thermal and Mechanical Characteristics

Storage temp range	TSTG	-65°C to 150°C
Operating junction temp range	$T_J$	-65°C to 150°C
Max thermal resistance	$R_{\theta JC}$	10°C/W
Max thermal resistance junction to ambient	$R_{\theta JA}$	25°C/W
Weight—typical		70 grams

# 688-1 to 688-25 & 688-10R to 688-25R

Figure 1  
Typical Forward Characteristics

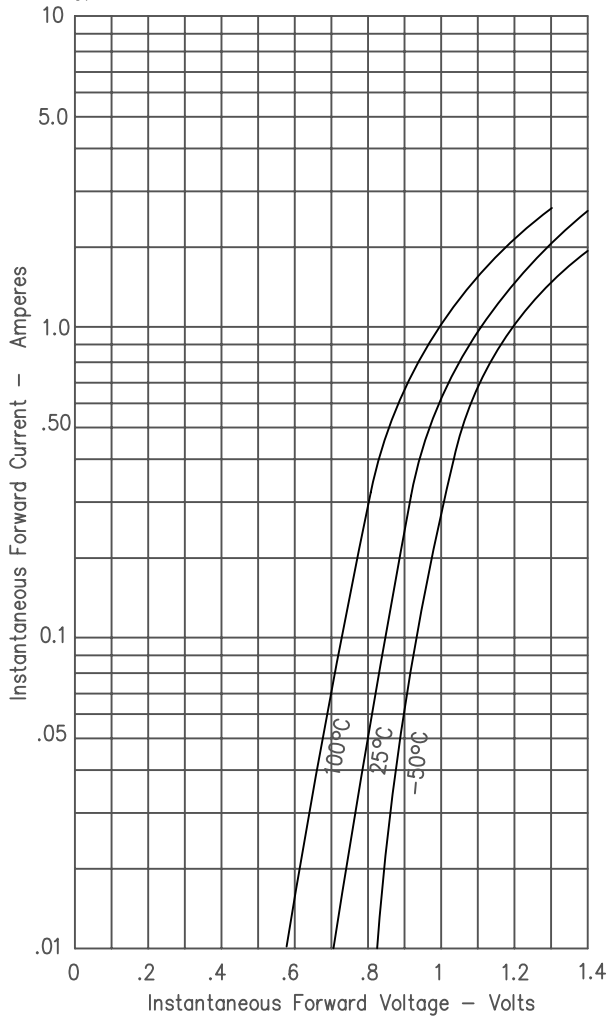


Figure 3  
Current Derating

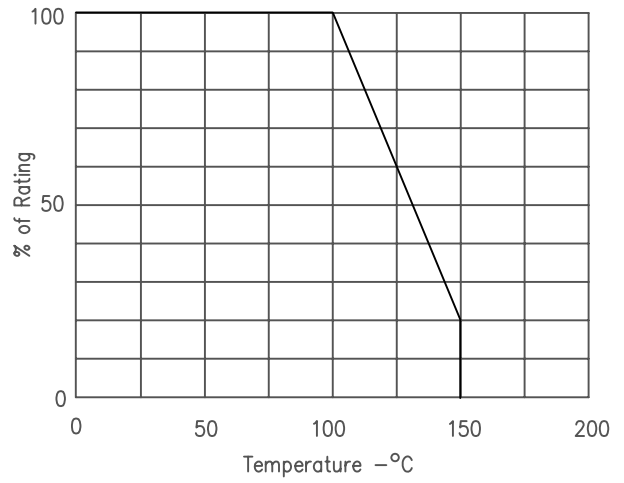


Figure 2  
Typical Reverse Leakage Current

