DUAL POWER SCHOTTKY RECTIFIERS

60A Pk, 45V

USD335C
USD345C
USD335CHR2
USD345CHR2

2

FEATURES
- Very Low Forward Voltage
- Low Recovered Charge
- Rugged Package Design (TO-3)
- High Efficiency for Low Voltage Supplies
- 45V Blocking @ Rated T_{jmax}
- 50V Repetitive Surge Voltage
- Dual Schottky Rectifier in a Single Package

DESCRIPTION
The USD320C series has two Schottky barriers arranged in a common cathode configuration and is ideally suited for a full wave output rectifier in low voltage switching power supplies.

	USD335C USD335CHR2	USD345C USD345CHR2
ABSOLUTE MAXIMUM RATINGS (Total for USD300C Series)		
Average Rectified Forward Current, I_O @ T_C = 100°C	30A	
ABSOLUTE MAXIMUM RATINGS (Per Diode)		
Working Peak Reverse Voltage V_{RWM}	35V	45V
DC Blocking Voltage, V_R	35V	45V
Peak Repetitive Surge Voltage, V_{RSM} @ I_{RM}	42V	54V
Average Rectified Forward Current, I_O	30A in full wave configuration*	
Non-repetitive Peak Surge current (8.3 mS), I_{FSM}	500A	
Peak Reverse Transient Current, I_{RM}	2A	
Storage Temperature Range, T_{stg}	-55°C to +200°C	
Peak Operating Junction Temperature, $T_{j\,max}$	175°C	
Thermal Resistance, Junction to Case, $R_{\theta JC}$	1.4°C/W	

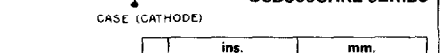
* Each Anode Pin Limited to 18A Average.
Package Capability 30A Average.

ELECTRICAL CHARACTERISTICS (T_{CASE} = 25°C)

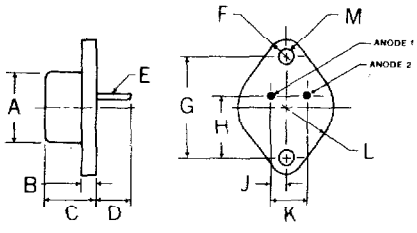
Characteristic	Symbol	Limit	Units	Conditions
Maximum Instantaneous Reverse Current	i_R	10 50	mA mA	T_C = 25°C, V_R = V_{RWM} T_C = 125°C Pulse Width = 400μS Duty Cycle = 1 percent
Maximum Instantaneous Forward Voltage	V_F	0.57 0.66 0.60	V V V	i_F = 10A, T_C = 25°C i_F = 20A, T_C = 25°C i_F = 20A, T_C = 125°C Pulse Width = 300μS Duty Cycle = 1 percent
Capacitance	C_t	2000	pF	V_R = 5.0V
Voltage Rate of Change	dv/dt	1000	v/μS	V_R = V_{RWM}

MECHANICAL SPECIFICATIONS

NOTE:
Leads may be soldered to within 1/16" of base provided temperature-time exposure is less than 260°C for 10 seconds.

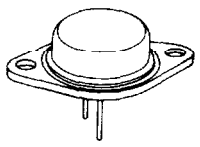


USD300C SERIES
USD300CHR2 SERIES



	ins.	mm.
A	.875 MAX.	22.23 MAX.
B	.135 MAX.	3.43 MAX.
C	.250-.450	6.35-11.43
D	.312 MIN.	7.92 MIN.
E	.038-.043 DIA.	0.97-1.09 DIA.
F	.188 MAX. RAD.	4.78 MAX. RAD.
G	1.177-1.197	29.90-30.40
H	.655-.675	16.64-17.15
J	.205-.225	5.21-5.72
K	.420-.440	10.67-11.18
L	.525 MAX. RAD.	13.34 MAX. RAD.
M	.151-.161 DIA.	3.84-4.09 DIA.

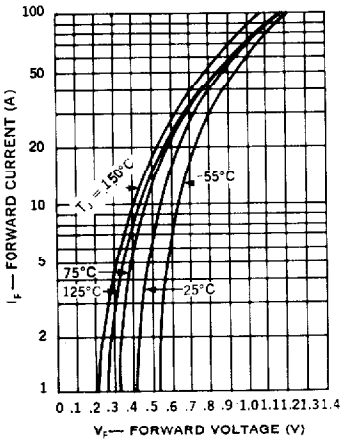
TO-204AA (TO-3)



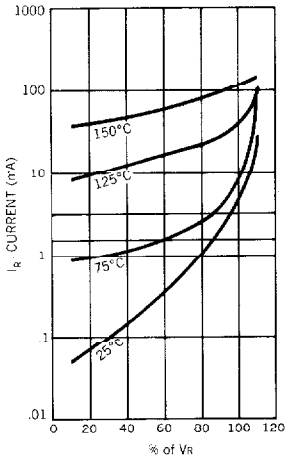
Notes: All metal surfaces tin plated.

Microsemi Corp.
Watertown
The diode experts

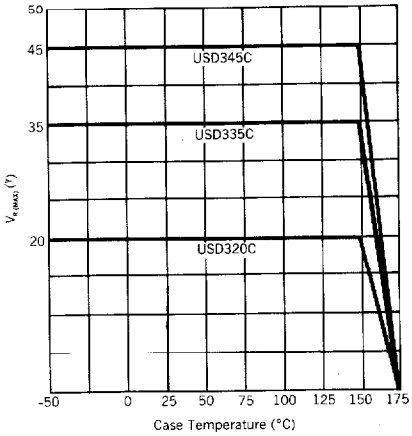
Typical Forward Current vs Forward Voltage



Typical Reverse Current vs. Reverse Voltage



$V_{R(MAX)}$ Rating vs. Case Temperature



OPTIONAL HIGH RELIABILITY (HR2) SCREENING

The following tests are performed on 100% of the devices specified USD335CHR2, 345CHR2.

SCREEN	MIL-STD-750 METHOD	CONDITIONS
1. High Temperature	1032	24 Hours @ T_A = 150°C
2. Temperature Cycle	1051	F, 20 Cycles, −55 to +150°C. No dwell required @ 25°C, t ≥ 10 min. @ extremes
3. Hermetic Seal a. Fine Leak b. Gross Leak	1071	 H, Helium C, Liquid
4. Thermal Impedance		Sage Test
5. Interim Electrical Parameters	GO/NO GO	V_F and I_R @ 25°C
6. High Temperature Reverse Blocking	Similar to Method 1040	½ Sine Reverse, t = 48 Hours, T_C = 125°C, VRW_M = rating, F = 50-60 Hz, I_O = 0A
7. Final Electrical Parameters	GO/NO GO	V_F + I_R @ 25°C PDA = 10% (Final Electricals)