

DUAL POWER SCHOTTKY RECTIFIERS

12A Av, up to 45V

USD620C
USD635C
USD640C
USD645C

4

FEATURES

- Very Low Forward Voltage
- Reverse Transient Capability
- Economical Convenient Plastic Package
- Mechanically Rugged
- 45V Working Voltage @ Rated $T_{j(max)}$

DESCRIPTION

The USD600C series of power Schottky rectifiers, in the industry standard TO-220 package, is specifically designed for operation in power switching circuits to frequencies in excess of 100 KHz. The series combines Schottky rectifiers in one convenient package; thus, simplifying installation, reducing heatsink requirements and component parts count.

ABSOLUTE MAXIMUM RATINGS (Per Diode Unless Otherwise Noted)

	USD620C	USD635C	USD640C	USD645C
Working Peak Reverse Voltage, V_{RWM}	20V	35V	40V	45V
DC Blocking Voltage, V_R	20V	35V	40V	45V
Peak Repetitive Surge Voltage, V_{RSM} @ I_{RM}	24V	42V	48V	54V
Average Rectified Forward Current @ $T_C = 115^\circ\text{C}$, I_O^*				12A
Non-repetitive Peak Surge Current (8.3ms), I_{FSM}				150A
Peak Reverse Transient Current, I_{RM}				1A
Operating Junction Temperature, T_J				150°C
Storage Temperature Range, T_{STG}				-55°C to +150°C
Thermal Resistance, Junction to Case, $R_{\theta JC}$				3.0°C/W

*Full Wave Center-Tap; I_O (AV), 20 KHz Square Wave

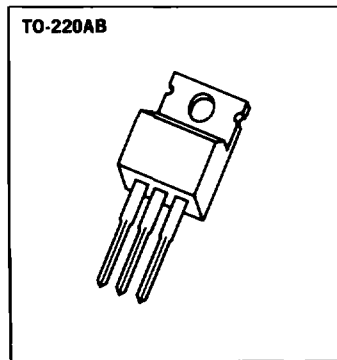
ELECTRICAL CHARACTERISTICS ($T_{CASE} = 25^\circ\text{C}$) (Per Diode)

CHARACTERISTIC	SYMBOL	LIMIT	UNITS	CONDITIONS
Maximum Instantaneous Reverse Current	i_R	5	mA	$V_R = V_{RWM}$ Pulse Width = 400 μs Duty Cycle = 1 percent
Maximum Instantaneous Reverse Current	i_R	50	mA	$V_R = V_{RWM}$ Pulse Width = 400 μs Duty Cycle = 1 percent $T_C = 125^\circ\text{C}$
Maximum Instantaneous Forward Voltage	v_F	0.55	V	$i_F = 6A$ $i_F = 12A$
		0.65	V	
Capacitance	C_t	0.48	V	$T_C = 125^\circ\text{C}$
		0.60		
Voltage Rate of Change	dv/dt	1000	V/ μs	$V_R = V_{RWM}$

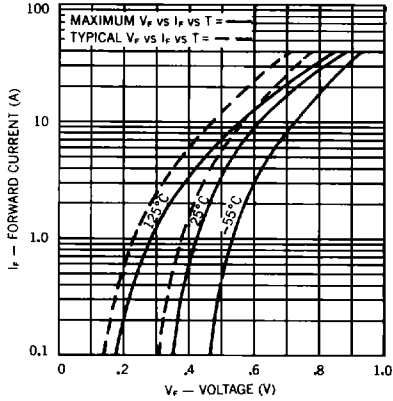
MECHANICAL SPECIFICATIONS

USD600C SERIES

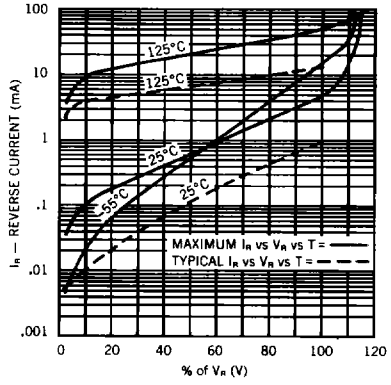
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	14.23	15.87	0.560	0.625
B	9.64	10.66	0.380	0.420
C	3.56	4.83	0.140	0.190
D	0.51	1.14	0.020	0.045
F	3.331	3.733	0.131	0.147
G	2.29	2.79	0.090	0.110
H	—	6.35	—	0.250
J	0.30	0.64	0.015	0.025
K	12.70	14.27	0.500	0.563
L	1.14	1.77	0.045	0.070
N	4.83	5.33	0.190	0.210
Q	2.94	3.04	0.100	0.120
R	2.04	2.92	0.080	0.115
S	1.14	1.39	0.045	0.055
T	5.85	6.85	0.230	0.270



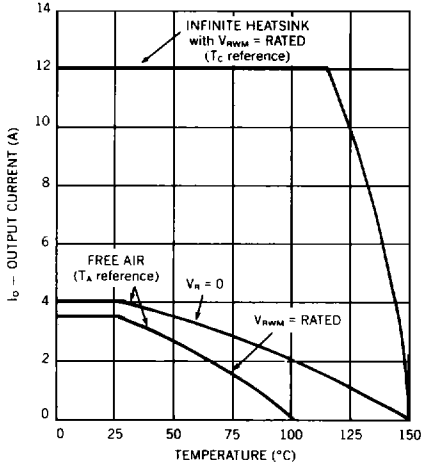
Forward Current vs. Forward Voltage



Reverse Current vs. Voltage



Average Output Current vs. Temperature



V_R Rating vs. Temperature

