MOSPEC

U20C05 Thru U20C20

Switchmode
Dual Ultrafast Power Rectifiers

…Designed for use in switching power supplies. inverters and as free wheeling diodes. These state-of-the-art devices have the following features:

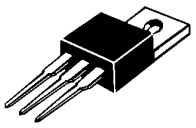
- ∗High Surge Capacity
- ∗Low Power Loss, High efficiency
- ∗Glass Passivated chip junctions
- ∗175℃ Operating Junction Temperature
- ∗Low Stored Charge Majority Carrier Conduction
- ∗Low Forward Voltage , High Current Capability
- ∗High-Switching Speed 35 Nanosecond Recovery Time
- ∗Plastic Material used Carries Underwriters Laboratory

Mechanical Data

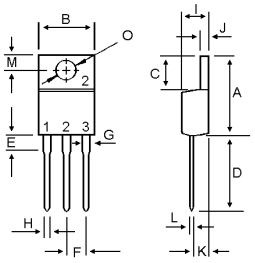
- ∗Case :JEDEC ITO-220AB molded plastic body
- ∗Terminals: Plated lead, solderable per MIL-STD-750, Method 2026
- ∗Polarity: As marked
- ∗Mounting Torque: 4-6kg.cm
- ∗Weight:1.7 g approx.
- ∗*In compliance with EU RoHs 2002/95/EC directives*

ULTRA FAST RECTIFIERS

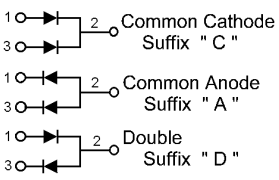
20 AMPERES 50-200 VOLTS



TO-220AB



DIM	MILLIMETERS	
	MIN	MAX
A	14.68	15.32
B	9.78	10.42
C	6.02	6.52
D	13.06	14.62
E	3.57	4.07
F	2.42	2.66
G	1.12	1.36
H	0.72	0.96
I	4.22	4.98
J	1.14	1.38
K	2.20	2.98
L	0.33	0.55
M	2.48	2.98
O	3.70	3.90



MAXIMUM RATINGS

Characteristic	Symbol	U20C				Unit
		05	10	15	20	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	50	100	150	200	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	105	140	V
Average Rectifier Forward Current Total Device (Rated V_R),T_C=125℃	$I_{F(AV)}$	10 20				A
Peak Repetitive Forward Current (Rate V_R, Square Wave, 20kHz, TC=125℃)	I_{FM}	20				A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions half-wave, single phase, 60Hz)	I_{FSM}	200				A
Operating and Storage Junction Temperature Range	T_J , T_{stg}	-65 to +175				℃

ELECTRIAL CHARACTERISTICS

Characteristic	Symbol	U20C				Unit
		05	10	15	20	
Maximum Instantaneous Forward Voltage (I_F =10 Amp T_C = 25℃) (I_F =10 Amp T_C = 125℃)	V_F	0.975 0.860				V
Maximum Instantaneous Reverse Current (Rated DC Voltage, T_C = 25℃) (Rated DC Voltage, T_C = 125℃)	I_R	10.0 300				uA
Reverse Recovery Time (I_F = 0.5 A, I_R =1.0 , I_{rr} =0.25 A)	T_{rr}	35				ns
Typical Thermal Resistance junction to case	$R_{\theta j\text{-}c}$	3.4				℃/w
Typical Junction Capacitance (Reverse Voltage of 4 volts & f=1 MHz)	C_P	140				pF

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FIG-1 TYPICAL FORWARD CHARACTERISITICS

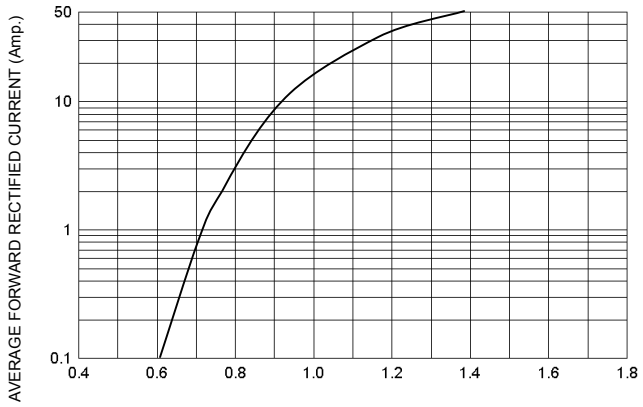


FIG-2 TYPICAL REVERSE CHARACTERISTICS

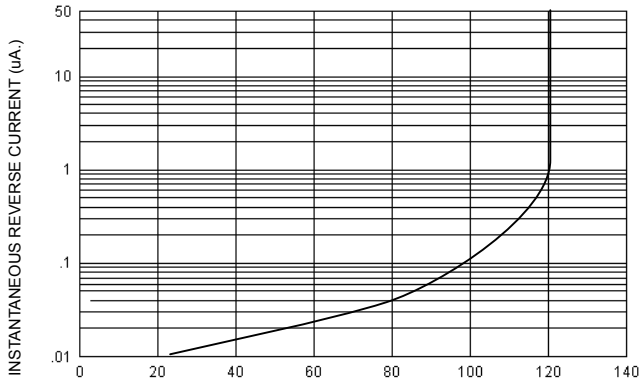


FIG-3 FORWARD CURRENT DERATING CURVE

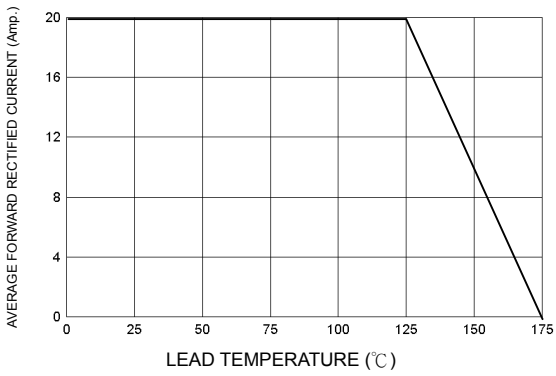


FIG-4TYPICAL JUNCTION CAPACITANCE

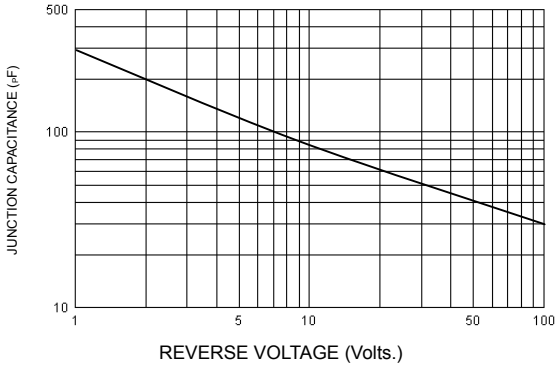
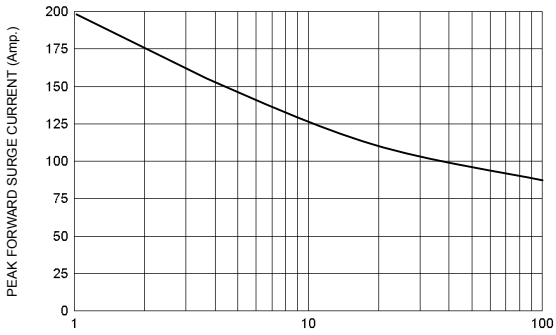
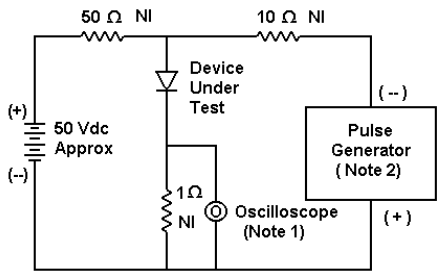
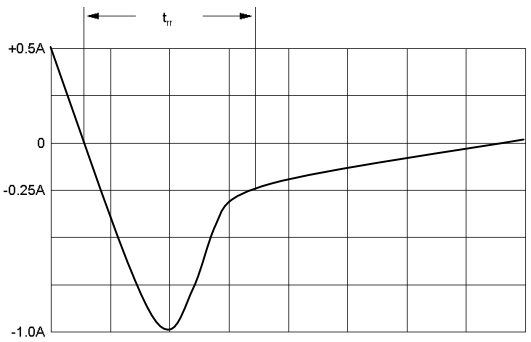


FIG-5PEAK FORWARD SURGE CURRENT





Notes:
1. Rise Time = 7 ns max. Input Impedance =1 M Ω , 22 pF
2. Rise Time = 10 ns max. Input Impedance = 50 Ω



Set time base for 10/20 ns/cm

FIG-6 Reverse Recovery Time Characteristic and Test Circuit Diagram

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