

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°C 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

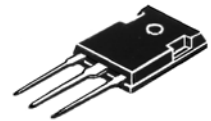


Mechanical Data

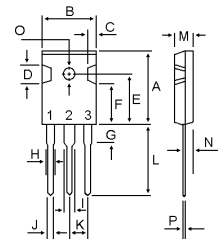
- * Case :JEDEC ITO-220AB molded plastic body
- * Terminals: Plated lead, solderable per MIL-STD-750, Method 2026
- * Polarity: As marked
- * Mounting Torque: 4-6kg.cm
- * Weight:1.7 g approx.
- * *In compliance with EU RoHs 2002/95/EC directives*

**ULTRA FAST
RECTIFIERS**

**20 AMPERES
50-200 VOLTS**



TO-3P



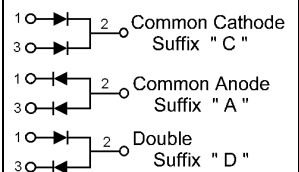
DIM	MILLIMETERS	
	MIN	MAX
A	20.63	22.38
B	15.38	16.20
C	1.90	2.70
D	5.10	6.10
E	14.81	15.22
F	11.72	12.84
G	4.20	4.50
H	1.82	2.46
I	2.92	3.23
J	0.89	1.53
K	5.26	5.66
L	18.50	21.50
M	4.68	5.36
N	2.40	2.80
O	3.25	3.65
P	0.55	0.70

MAXIMUM RATINGS

Characteristic	Symbol	U20D				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), $T_C=125^\circ C$	$I_{F(AV)}$	10 20				A
Peak Repetitive Forward Current (Rate V_R , Square Wave, 20kHz, $T_C=125^\circ C$)	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				$^\circ C$

ELECTRIAL CHARACTERISTICS

Characteristic	Symbol	U20D				Unit
		05	10	15	20	
Maximum Instantaneous Forward Voltage ($I_F=10$ Amp $T_C=25^\circ C$) ($I_F=10$ Amp $T_C=125^\circ C$)	V_F	0.975 0.860				V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C=25^\circ C$) (Rated DC Voltage, $T_C=125^\circ C$)	I_R	10.0 300				μA
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	$R_{\theta j-c}$	3.2				$^\circ C/W$
Typical Junction Capacitance (Reverse Voltage of 4 volts & $f=1$ MHz)	C_P	140				pF



U20D05 Thru U20D20

FIG-1 TYPICAL FORWARD CHARACTERISTICS

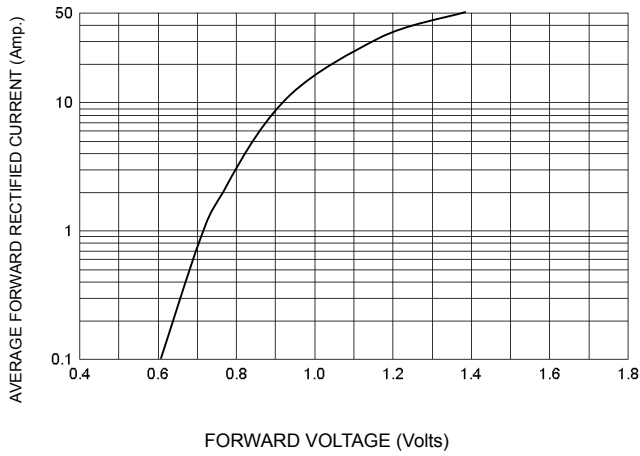


FIG-3 FORWARD CURRENT DERATING CURVE

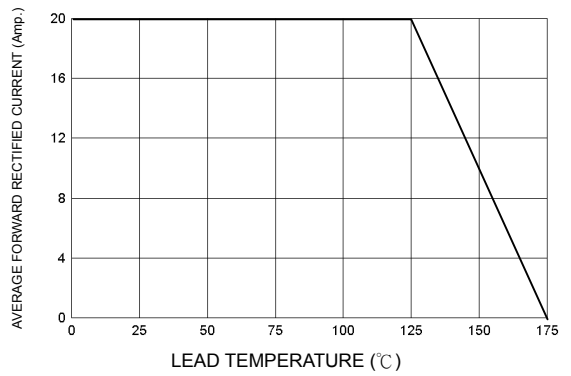


FIG-2 TYPICAL REVERSE CHARACTERISTICS

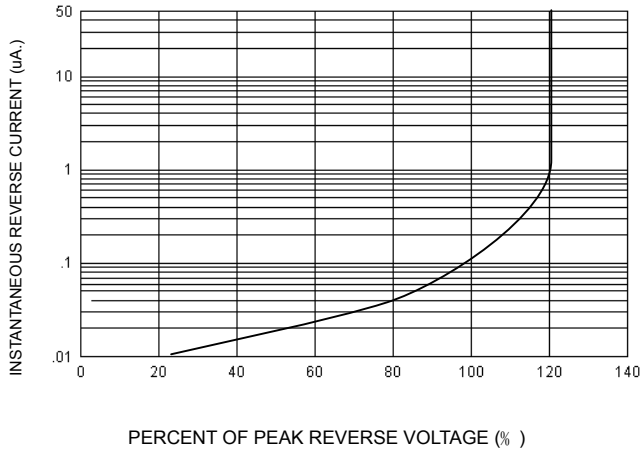


FIG-4 TYPICAL JUNCTION CAPACITANCE

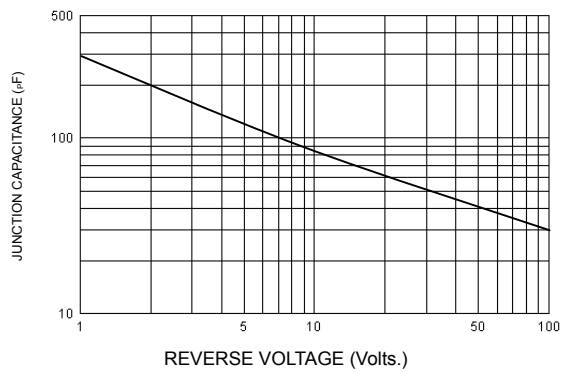
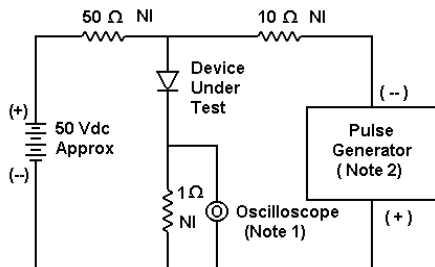
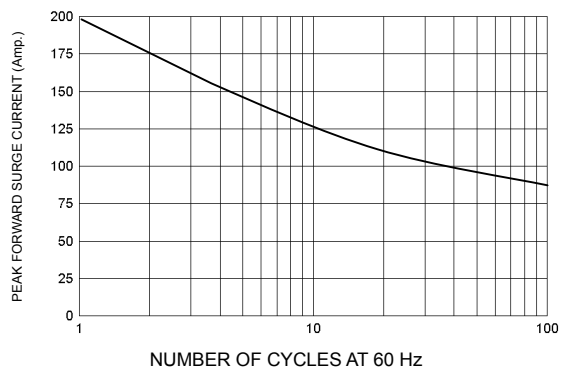
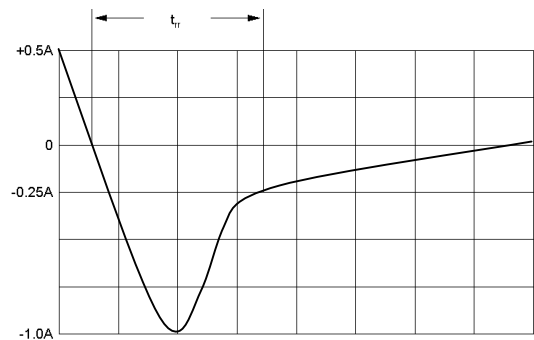


FIG-5 PEAK FORWARD SURGE CURRENT



- Notes:
 1. Rise Time = 7 ns max. Input Impedance = 1 MΩ, 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