

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*

MAXIMUM RATINGS

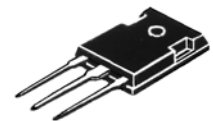
Characteristic	Symbol	U20D				Unit
		05	10	15	20	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	50	100	150	200	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	105	140	V
Average Rectifier Forward Current Total Device (Rated V_R), $T_C=125^\circ\text{C}$	$I_{F(AV)}$	10 20				A
Peak Repetitive Forward Current (Rate V_R , Square Wave, 20kHz, $T_C=125^\circ\text{C}$)	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				°C

ELECTRIAL CHARACTERISTICS

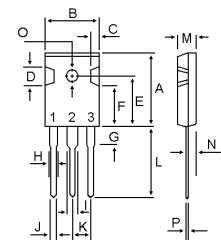
Characteristic	Symbol	U20D				Unit
		05	10	15	20	
Maximum Instantaneous Forward Voltage ($I_F=10$ Amp $T_C=25^\circ\text{C}$) ($I_F=10$ Amp $T_C=125^\circ\text{C}$)	V_F	0.975 0.860				V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C=25^\circ\text{C}$) (Rated DC Voltage, $T_C=125^\circ\text{C}$)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

**ULTRA FAST
RECTIFIERS**

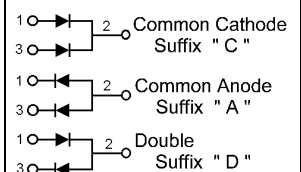
**20 AMPERES
50-200 VOLTS**



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



U20D05 Thru U20D20

FIG-1 TYPICAL FORWARD CHARACTERISTICS

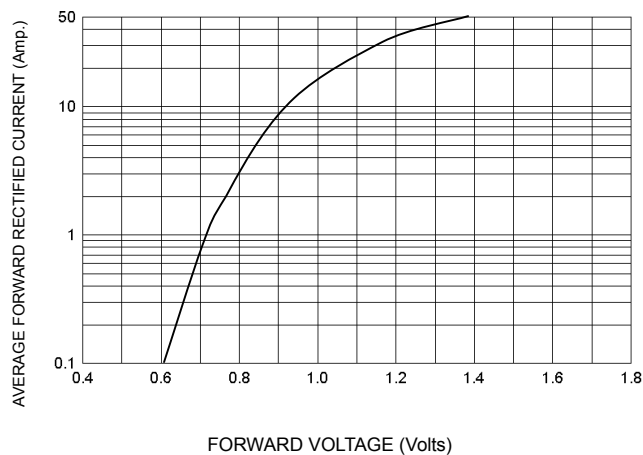


FIG-3 FORWARD CURRENT DERATING CURVE

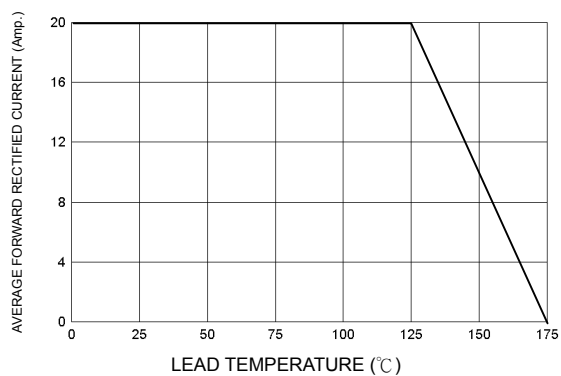


FIG-2 TYPICAL REVERSE CHARACTERISTICS

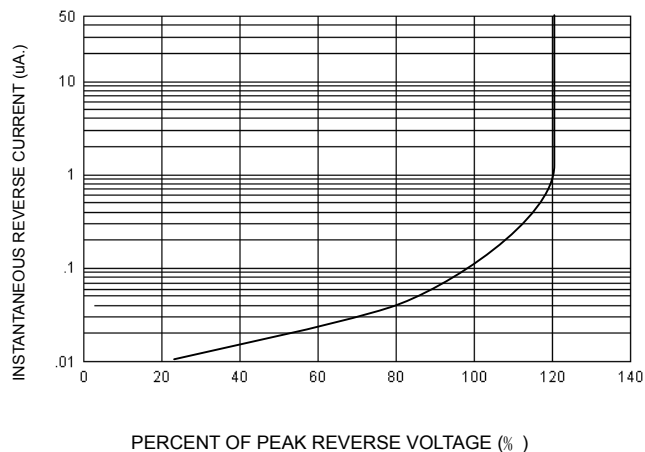


FIG-4 TYPICAL JUNCTION CAPACITANCE

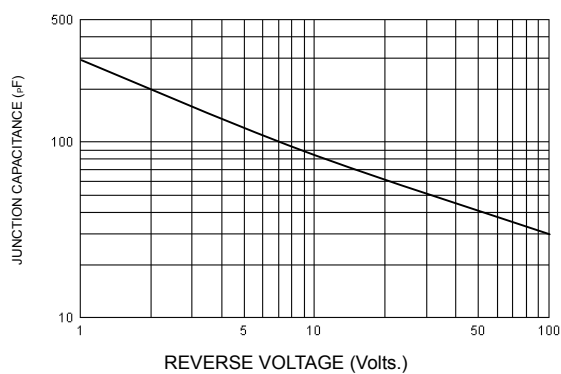
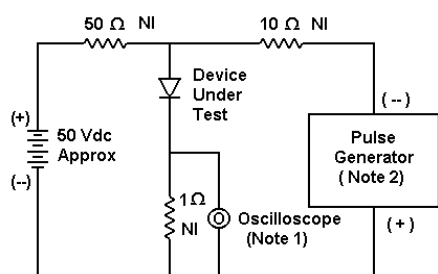
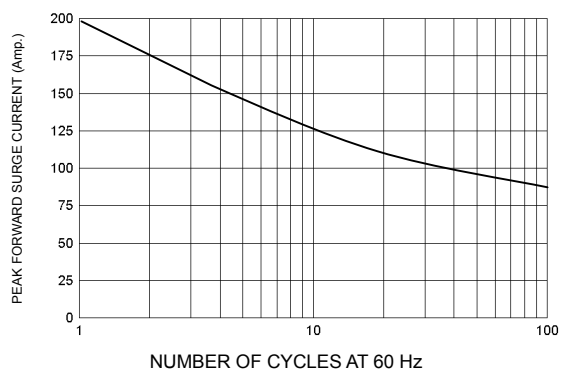
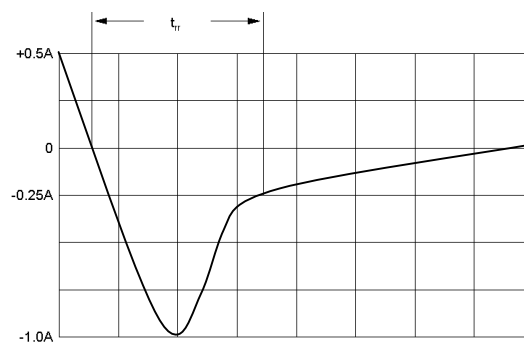


FIG-5 PEAK FORWARD SURGE CURRENT



- 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

Notice

MOSPEC reserves the rights to make changes of the content herein the document anytime without notification. MOSPEC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies. Please refer to MOSPEC website for the last document.

MOSPEC disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially incurred.

Application shown on the herein document are examples of standard use and operation. Customers are responsible for comprehending suitable use in particular applications. MOSPEC makes no representation or warranty that such application will be suitable for the specified use without further testing or modification.

The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by MOSPEC for any infringements of patents or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of MOSPEC or others.

These MOSPEC products are intended for usage in general electronic equipment. Please make sure to consult with MOSPEC before you use these MOSPEC products in equipment which require specialized quality and/or reliability, and in equipment which could have major impact to the welfare of human life (atomic energy control, aeronautics , traffic control, combustion control, safety devices etc.)