

## Super Fast Rectifier

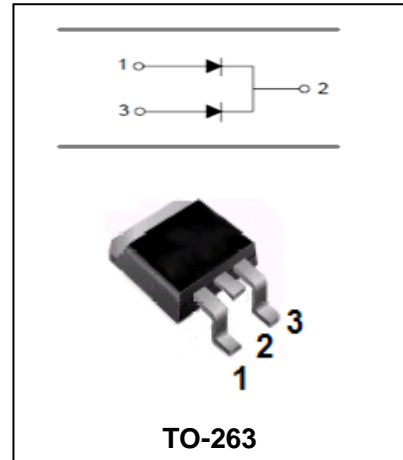
## USF2020BC-USF2060BC

### FEATURES

- Low cost.
- Low Leakage.
- Low forward voltage drop.
- High current capability.
- Easily cleaned with alcohol, Isopropanol and similar solvents.
- The Plastic Material Carries U/L Recognition 94V-0.



Lead-free



### MAXIMUM RATING operating temperature range applies unless otherwise specified

Symbol	Parameter	USF 2020 BC	USF 2030 BC	USF 2040 BC	USF 2050 BC	USF 2060 BC	Unit
$V_{RRM}$	Repetitive Peak Reverse Voltage	200	300	400	500	600	V
$V_{RMS}$	RMS Voltage	140	210	270	350	420	V
$V_{DC}$	DC Blocking Voltage	200	300	400	500	600	V
$I_{F(AV)}$	Average Forward Rectified Current @ $T_A=100^\circ\text{C}$	20					A
$I_{FSM}$	Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimosed on Rated Load	150					A
$T_j T_{stg}$	Operating Junction and Storage Temperature Range	-55 to +150					$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified

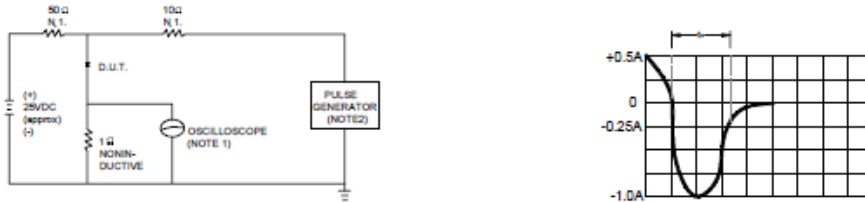
Parameter	Symbol	Test conditions	USF2020BC	USF2030BC- USF2040BC	USF2050BC- USF2060BC	UNIT
			MAX			
Reverse Current	$I_R$	$V_R=V_{RRM}, T_A=25^\circ\text{C}$ $V_R=V_{RRM}, T_A=100^\circ\text{C}$	5.0 250	10 500		$\mu\text{A}$
Forward Voltage	$V_F$	$I_F=10\text{A}$	0.98	1.3	1.7	V
Reverse recover time	$t_{rr}$	$I_F=0.5\text{A}, I_R=1\text{A}, I_{rr}=0.25\text{A}$	25			ns

**Super Fast Rectifier**

**USF2020BC-USF2060BC**

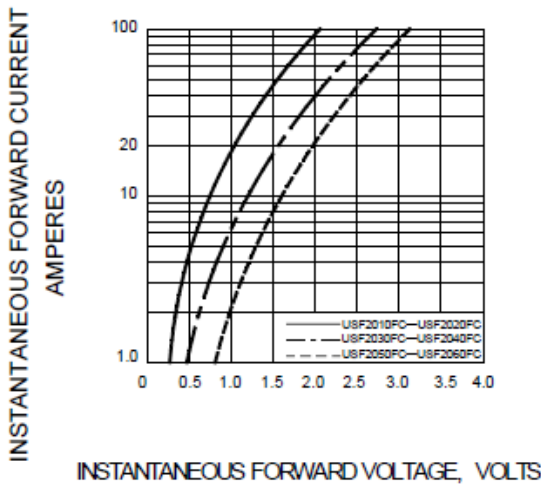
TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

**FIG.1 – TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC**

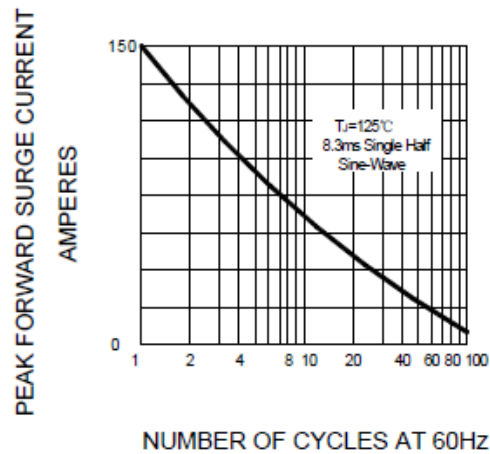


NOTES: 1. RISE TIME = 7ns MAX INPUT IMPEDANCE = 1MΩ, 22pF.  
2. RISE TIME = 10ns MAX SOURCE IMPEDANCE = 50 Ω.

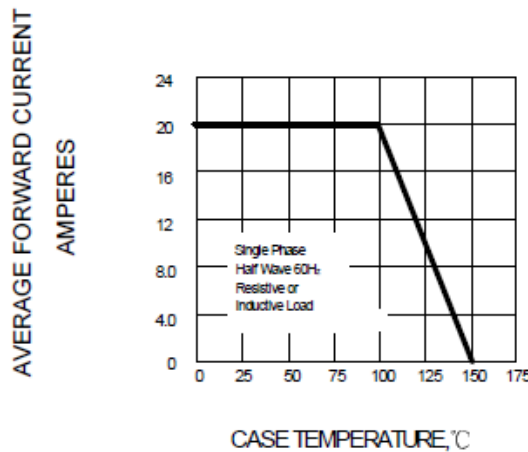
**FIG.2 – TYPICAL FORWARD CHARACTERISTIC**



**FIG.3 – PEAK FORWARD SURGE CURRENT**



**FIG.4 FORWARD DERATING CURVE**



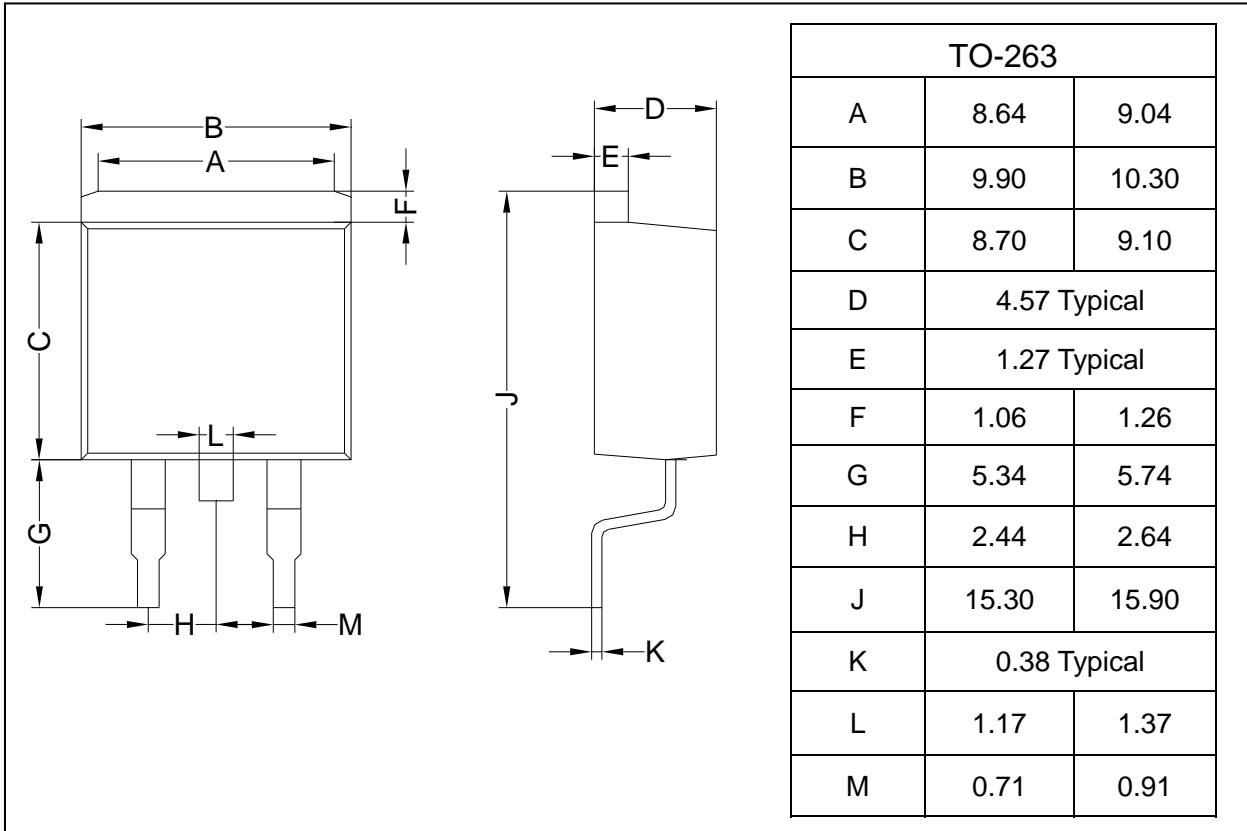
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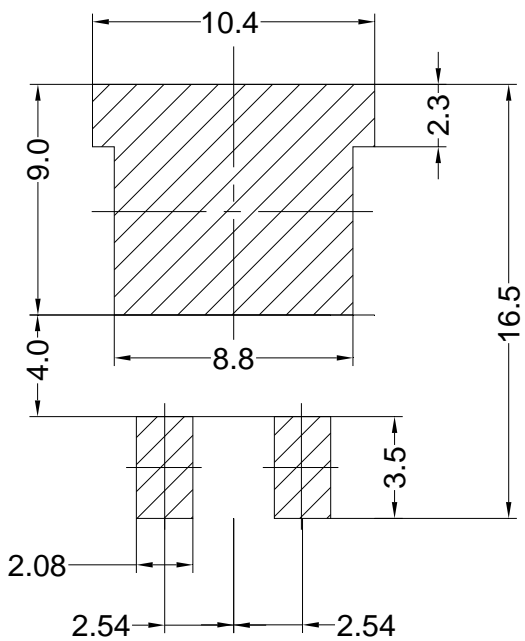
**PACKAGE OUTLINE**

Plastic surface mounted package

TO-263



**SOLDERING FOOTPRINT**



Unit:mm