

# BL GALAXY ELECTRICAL

## USF31 --- USF34

### SUPER FAST RECTIFIER

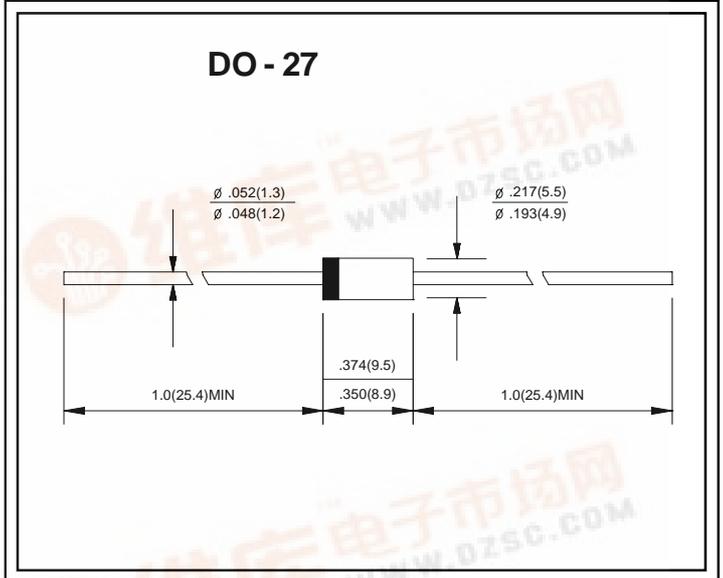
VOLTAGE RANGE: 50 --- 200 V  
CURRENT: 3.0 A

#### 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

#### MECHANICAL DATA

- ◇ Case: JEDEC DO-27, molded plastic
- ◇ Terminals: Axial lead, solderable per MIL-STD-202, Method 208
- ◇ Polarity: Color band denotes cathode
- ◇ Weight: 0.041 ounces, 1.15 grams
- ◇ Mounting position: Any



#### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate by 20%.

		USF31	USF32	USF33	USF34	UNITS
Maximum recurrent peak reverse voltage	$V_{RRM}$	50	100	150	200	V
Maximum RMS voltage	$V_{RMS}$	35	70	105	140	V
Maximum DC blocking voltage	$V_{DC}$	50	100	150	200	V
Maximum average forward rectified current 9.5mm lead length, @ $T_A=75^\circ C$	$I_{F(AV)}$	3.0				A
Peak forward surge current 8.3ms single half-sine-wave superimposed on rated load @ $T_J=125^\circ C$	$I_{FSM}$	125.0				A
Maximum instantaneous forward voltage @ 3.0A	$V_F$	0.92				V
Maximum reverse current @ $T_A=25^\circ C$ at rated DC blocking voltage @ $T_A=100^\circ C$	$I_R$	10.0 500.0				$\mu A$
Maximum reverse recovery time (Note1)	$t_{rr}$	20				ns
Typical junction capacitance (Note2)	$C_J$	20				pF
Typical thermal resistance (Note3)	$R_{\theta JA}$	20				$^\circ C/W$
Operating junction temperature range	$T_J$	- 55 ----- + 150				$^\circ C$
Storage temperature range	$T_{STG}$	- 55 ----- + 150				$^\circ C$

NOTE: 1. Measured with  $I_F=0.5A$ ,  $I_R=1A$ ,  $t_{rr}=0.25A$ .

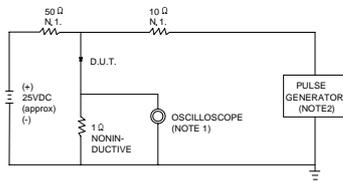
2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

3. Thermal resistance from junction to ambient.

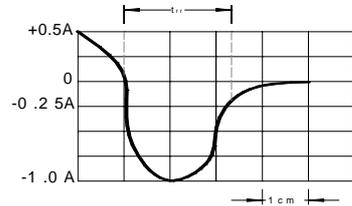
www.galaxycn.com



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



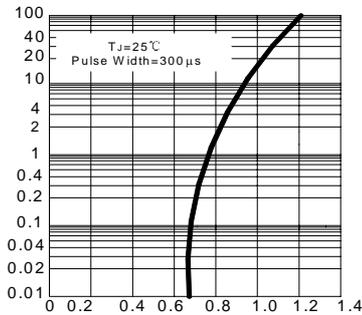
NOTES: 1. RISE TIME = 7ns MAX. INPUT IMPEDANCE = 1MΩ. 22pF.  
 2. RISE TIME = 10ns MAX. SOURCE IMPEDANCE = 50 Ω.



SET TIME BASE FOR 10/20 ns/cm

**FIG. 2 – TYPICAL FORWARD CHARACTERISTIC**

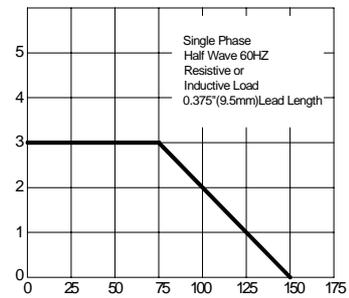
INSTANTANEOUS FORWARD CURRENT, AMPERES



INSTANTANEOUS FORWARD VOLTAGE, VOLTS

**FIG. 3 – FORWARD DERATING CURVE**

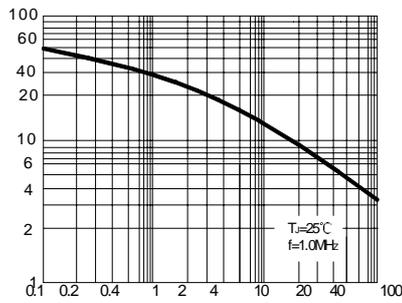
AVERAGE FORWARD CURRENT AMPERES



AMBIENT TEMPERATURE, °C

**FIG. 4 – TYPICAL JUNCTION CAPACITANCE**

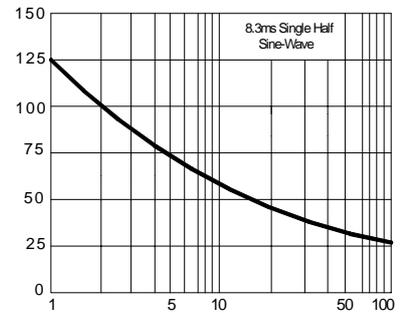
JUNCTION CAPACITANCE, pF



REVERSE VOLTAGE, VOLTS

**FIG. 5 – PEAK FORWARD SURGE CURRENT**

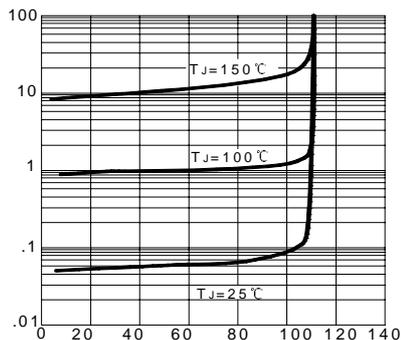
PEAK FORWARD SURGE CURRENT, AMPERES



NUMBER OF CYCLES AT 60Hz

**FIG. 6 – TYPICAL REVERSE CHARACTERISTICS**

INSTANTANEOUS REVERSE CURRENT, MICROAMPERES



PERCENT OF RATED PEAK REVERSE VOLTAGE, %