

ULTRA FAST RECTIFIERS

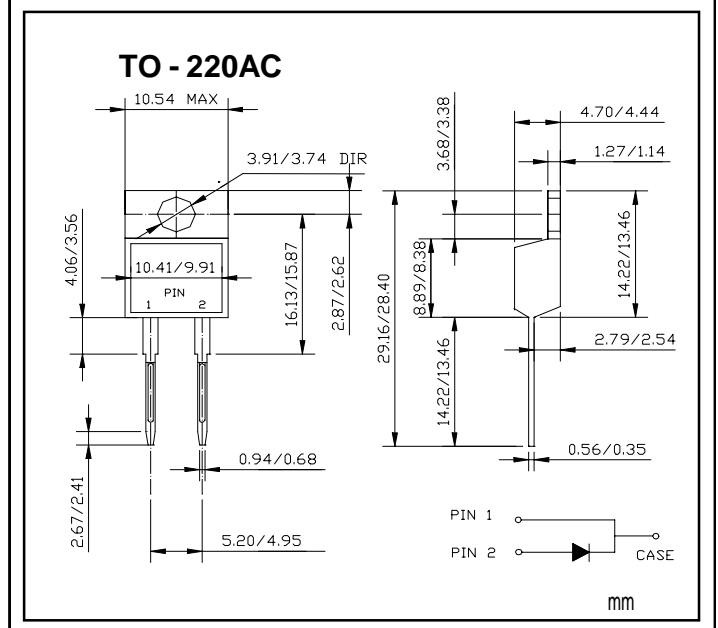
VOLTAGE RANGE: 50 --- 400 V
CURRENT: 8.0A

FEATURES

- ◇ Metal-Semiconductor junction with guard ring
- ◇ Epitaxial construction
- ◇ Low forward voltage drop, low switching losses
- ◇ High surge capability
- ◇ For use in low voltage, high frequency inverters free wheeling, and polarity protection applications
- ◇ The plastic material carries U/L recognition 94V-0

MECHANICAL DATA

- ◇ Case: JEDEC TO-220AC, molded plastic
- ◇ Terminals: Leads solderable per MIL-STD-750, Method 2026
- ◇ Polarity: As marked
- ◇ Weight: 0.064 ounces, 1.81 gram
- ◇ Mounting position: Any



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

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

		SF81	SF82	SF83	SF84	SF85	SF86	UNITS
Maximum recurrent peak reverse voltage	V_{RRM}	50	100	150	200	300	400	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	V
Maximum DC blocking voltage	V_{DC}	50	100	150	200	300	400	V
Maximum average forward rectified current @ $T_c=100^\circ\text{C}$	$I_{F(AV)}$	8.0						A
Peak forward surge current 8.3ms single half-sine-wave superimposed on rated load	I_{FSM}	125						A
Maximum instantaneous forward voltage @ 8.0A	V_F	1.0				1.35		V
Maximum reverse current @ $T_c=25^\circ\text{C}$ at rated DC blocking voltage @ $T_c=100^\circ\text{C}$	I_R	10 500						μA
Typical thermal resistance (Note 2)	$R_{\theta JC}$	3.0						$^\circ\text{C/W}$
Maximum reverse recovery time (Note 3)	t_{rr}	35				50		ns
Typical junction capacitance (Note 1)	C_J	50				30		pF
Operating junction temperature range	T_J	-55 ---- +150						$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 ---- +150						$^\circ\text{C}$

NOTE: 1. Measured at 1MHz and applied reverse voltage of 4.0 volts.
2. Thermal resistance junction to case.
3. Reverse recovery test conditions: $I_F=0.5\text{A}$, $I_R=1\text{A}$, $I_{rr}=0.25\text{A}$

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FIG.1 -- FORWARD CURRENT DERATING CURVE

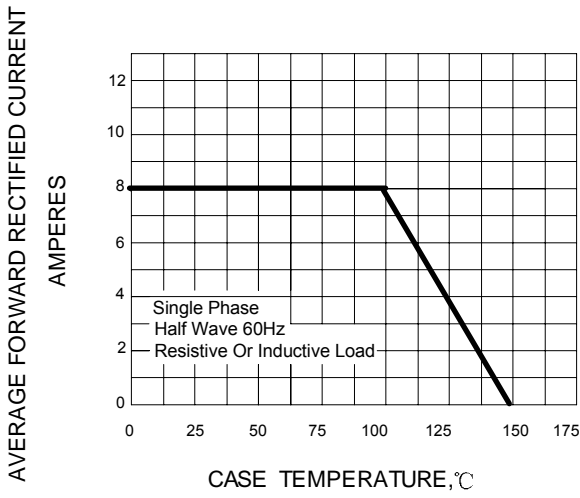


FIG.2 -- PEAK FORWARD SURGE CURRENT

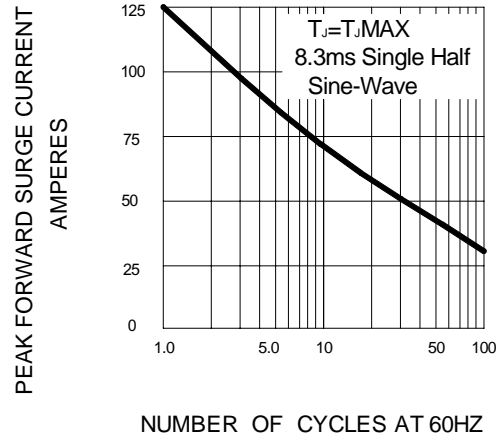


FIG.3 -- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

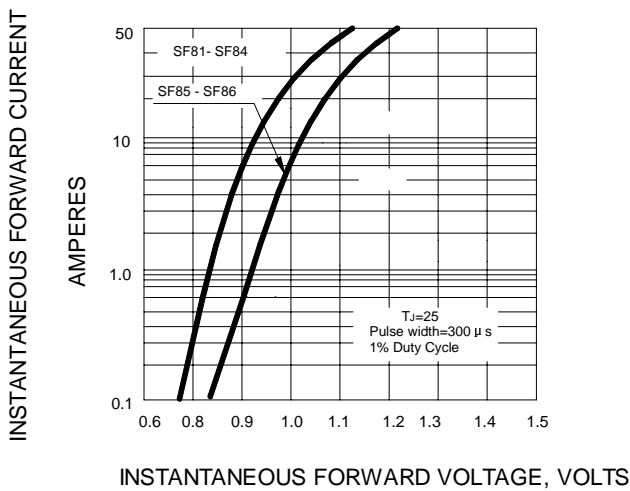


FIG.4 - TYPICAL JUNCTION CAPACITANCE

