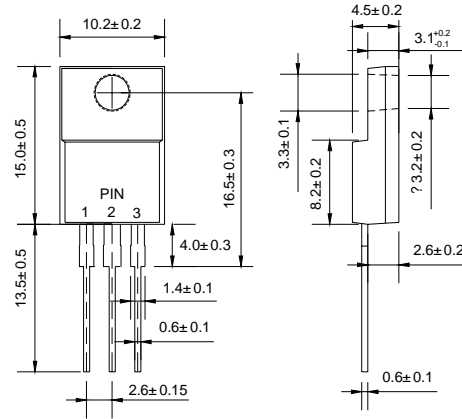


**VOLTAGE RANGE: 200 - 600V**  
**CURRENT: 5.0 A**



### TO-220



Dimensions in millimeters

### 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-220
- Polarity: As marked
- Weight: 0.06 ounce, 1.67 grams
- Mounting position: Any



### Maximum Ratings and Electrical Characteristics T<sub>A</sub> = 25°C unless otherwise specified

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

Characteristic	Symbol	FMU -12S	FMU-14 S	FMU-16S	Unit
Maximum recurrent peak reverse voltage	V <sub>RRM</sub>	200	400	600	V
Maximum RMS voltage	V <sub>RMS</sub>	140	280	420	V
Maximum DC blocking voltage	V <sub>DC</sub>	200	400	600	V
Maximum average forward rectified current @ T <sub>C</sub> =100°C	I <sub>F(AV)</sub>	5.0			A
Peak forward surge current 10ms single half-sine-wave superimposed on rated load	I <sub>FSM</sub>	30			A
Maximum instantaneous forward voltage (I <sub>F</sub> =2.5A)	V <sub>F</sub>	1.5			V
Maximum reverse current @ T <sub>J</sub> =25 °C at rated DC blocking voltage @ T <sub>J</sub> =100 °C	I <sub>R</sub>	50 500			μ A
Maximum reverse recovery time (Note1)	t <sub>rr</sub>	100			ns
Typical thermal resistance (Note2)	R <sub>θJC</sub>	4.0			°C/W
Operating junction temperature range	T <sub>J</sub>	- 55 ---- + 150			°C
Storage temperature range	T <sub>STG</sub>	- 55 ---- + 150			°C

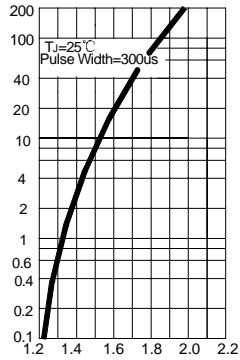
NOTE: 1. Measured with I<sub>F</sub>=0.5A, I<sub>R</sub>=1A, I<sub>rr</sub>=0.25A.

2. Thermal resistance junction to case.

## Ratings AND Characteristic Curves FMU-12S-FMU-16S

**FIG.1 – TYPICAL FORWARD CHARACTERISTIC**

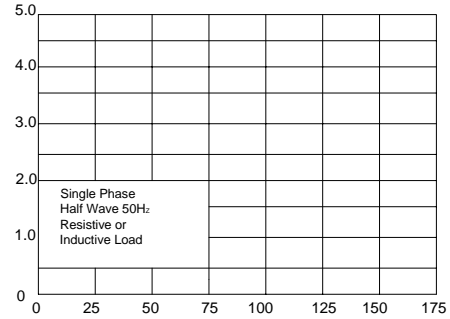
INSTANTANEOUS FORWARD CURRENT  
AMPERES



INSTANTANEOUS FORWARD VOLTAGE, VOLTS

**FIG.2– FORWARD DERATING CURVE**

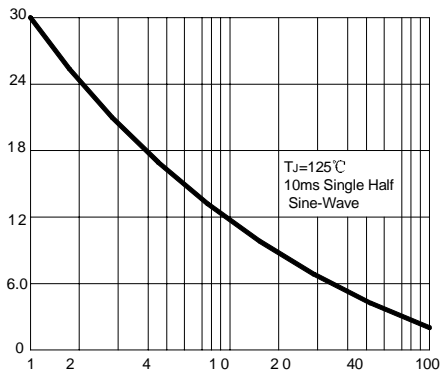
AVERAGE FORWARD CURRENT  
AMPERES



CASE TEMPERATURE, °C

**FIG.3– PEAK FORWARD SURGE CURRENT**

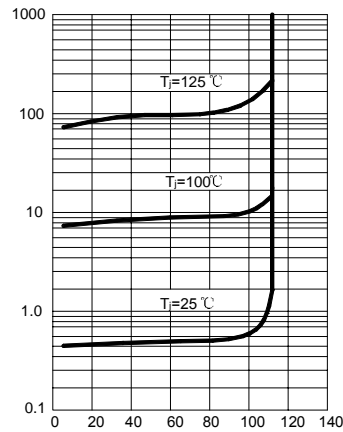
PEAK FORWARD SURGE CURRENT  
AMPERES



NUMBER OF CYCLES AT 50Hz

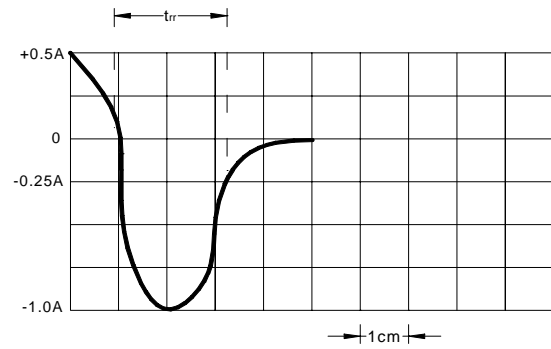
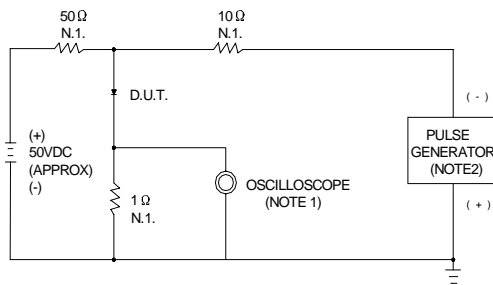
**FIG.4 – TYPICAL REVERSE CHARACTERISTICS**

INSTANTANEOUS REVERSE CURRENT,  
MILLIAMPERES



PERCENT OF RATED PEAK REVERSE VOLTAGE, (%)

**FIG.5 – REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM**



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

SET TIME BASE FOR 50ns/cm