



# Frontier Electronics Corp.

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## 1A GENERAL PURPOSE PLASTIC RECTIFIER

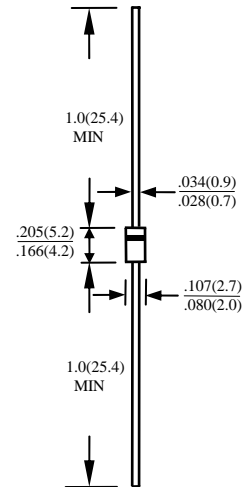
### EM513 THRU EM520

#### FEATURES

- UL 94V0 FLAME RETARDANT EPOXY MOLDING COMPOUND
- DIFFUSED JUNCTION
- LOW COST
- HIGH SURGE CURRENT CAPABILITY

#### MECHANICAL DATA

- CASE: TRANSFER MOLDED, DO41, DIMENSIONS IN INCHES AND (MILLIMETERS)
- LEADS: SOLDERABLE PER MIL-STD-202, METHOD 208
- POLARITY: CATHODE INDICATED BY COLOR BAND
- WEIGHT: 0.34 GRAMS



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 CURRENT BY 20%

RATINGS	SYMBOL	EM513	EM516	EM520	UNITS
MAXIMUM RECURRENT PEAK REVERSE VOLTAGE	$V_{RRM}$	1600	1800	2000	V
MAXIMUM RMS VOLTAGE	$V_{RMS}$	1120	1260	1400	V
MAXIMUM DC BLOCKING VOLTAGE	$V_{DC}$	1600	1800	2000	V
MAXIMUM AVERAGE FORWARD RECTIFIED CURRENT 0.375" (9.5mm) LEAD LENGTH AT $T_A=55^\circ\text{C}$	$I_O$	1.0			A
PEAK FORWARD SURGE CURRENT, 8.3ms SINGLE HALF SINE-WAVE SUPERIMPOSED ON RATED LOAD	$I_{FSM}$	30			A
TYPICAL JUNCTION CAPACITANCE (NOTE 1)	$C_J$	15			PF
TYPICAL THERMAL RESISTANCE (NOTE 2)	$R_{\theta ja}$	50			°C/W
STORAGE TEMPERATURE RANGE	$T_{STG}$	-55 TO + 175			°C
OPERATING TEMPERATURE RANGE	$T_{OP}$	-55 TO + 175			°C

#### ELECTRICAL CHARACTERISTICS (AT $T_A=25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

CHARACTERISTICS	SYMBOL	EM513	EM516	EM520	UNITS
MAXIMUM FORWARD VOLTAGE AT $I_O$ DC	$V_F$	1.1			V
MAXIMUM REVERSE CURRENT AT 25°C	$I_R$	5			μA
MAXIMUM REVERSE CURRENT AT 100°C	$I_R$	50			μA

- NOTE: 1. MEASURED AT 1MHZ AND APPLIED REVERSE VOLTAGE OF 4.0 VOLTS  
2. BOTH LEADS ATTACHED TO HEAT SINK 20×20×1t(mm) COPPER PLATE AT LEAD LENGTH 5mm

# RATINGS AND CHARACTERISTIC CURVES EM513 THRU EM520

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

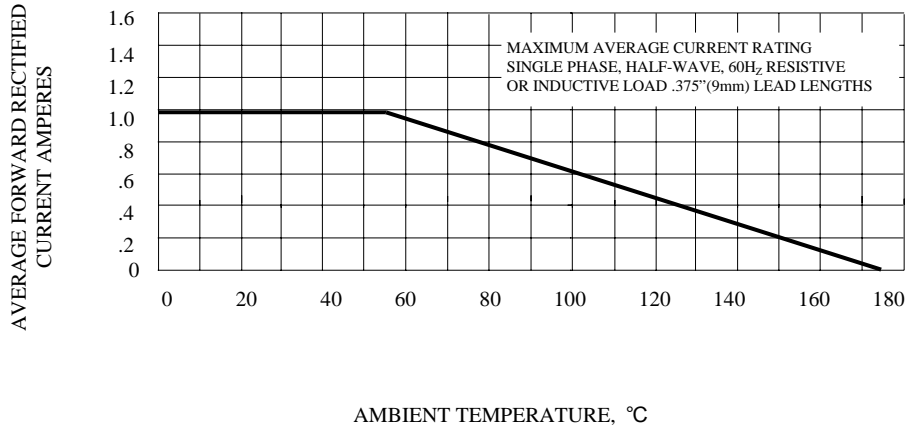


FIG. 2 - TYPICAL FORWARD CHARACTERISTICS

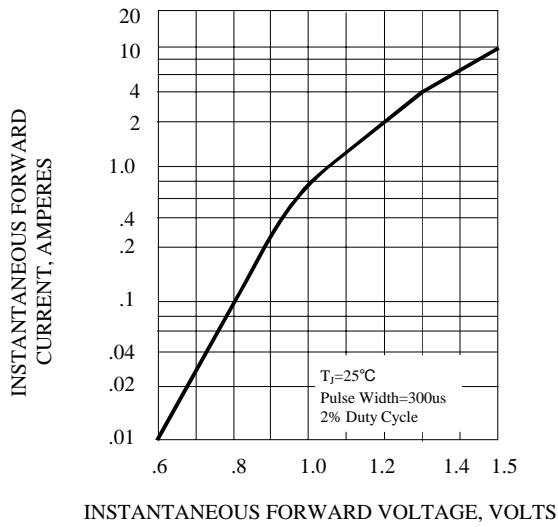


FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

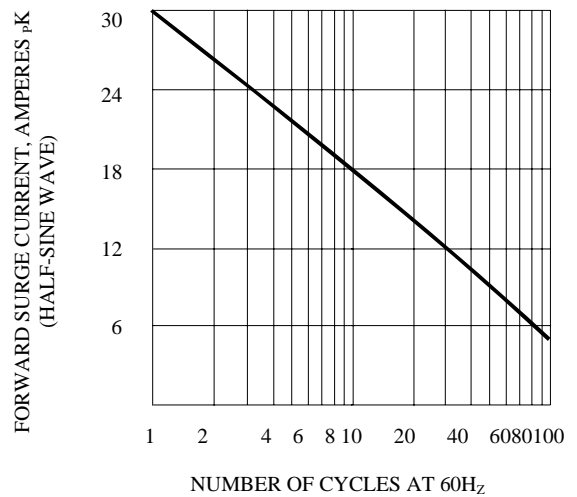


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

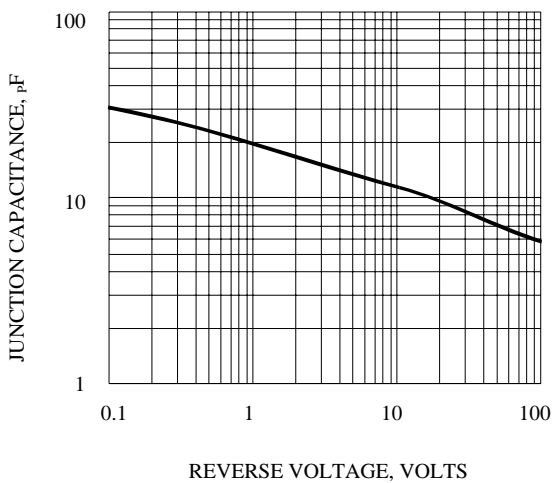


FIG. 5 - TYPICAL REVERSE CHARACTERISTICS

