

DIGITRON SEMICONDUCTORS

A115A-A115M

FAST RECOVERY RECTIFIERS

MAXIMUM RATINGS (for single phase, 60Hz, half-wave resistive or inductive load ⁽¹⁾)

Parameter	Symbol	A115F	A115A	A115B	A115C	A115D	A115E	A115M	Units
Maximum peak repetitive reverse voltage	V_{RRM}	50	100	200	300	400	500	600	V
Maximum RMS input voltage	V_{RMS}	35	70	140	210	280	350	420	V
Maximum DC reverse voltage	$V_{R(DC)}$	50	100	200	300	400	500	600	V
Maximum average forward output current $L = 0.375"$, $T_A = -55^\circ\text{C}$	I_O	3							A
Maximum peak surge current (8.3ms half sine wave, superimposed on rated load)	I_{FSM}	100							A
Operating junction and storage temperature range	T_J, T_{stg}	-65° to 175							°C

(1) For capacitive load derate current by 20%.

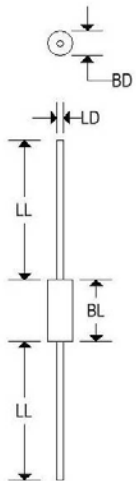
ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise noted)

Parameter	Symbol	Limits			Units
		Min	Typ	Max	
Maximum instantaneous forward voltage drop @ 3A	V_F	-	-	1.3	V
Maximum full load reverse current @ average full cycle, $L = 0.375"$, $T_A = 25^\circ\text{C}$ @ average full cycle, $L = 0.375"$, $T_A = 150^\circ\text{C}$	I_R	-	-	2 100	μA
Maximum DC reverse current at maximum DC blocking voltage	I_R	-	-	5	μA
Maximum reverse recovery time @ $I_F = 0.5\text{A}$, $I_R = 1\text{A}$, $I_{RR} = 0.25\text{A}$	t_{rr}	-	-	150 ⁽²⁾	μs
Typical junction capacitance @ frequency = 1MHz and applied reverse voltage = 4V	C_J	-	40	-	pF

(2) 250ns for A115M.

MECHANICAL CHARACTERISTICS

Case:	SOD-64
Marking:	Body painted, alpha-numeric
Polarity:	Cathode band



	SOD-64			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	0.169	0.250	4.300	6.350
BL	-	0.300	-	7.620
LD	0.048	0.053	1.219	1.350
LL	1.024	1.102	26.000	28.000

Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).

Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.

144 Market Street
Kenilworth NJ 07033 USA

phone +1.908.245-7200
fax +1.908.245-0555

sales@digitroncorp.com
www.digitroncorp.com

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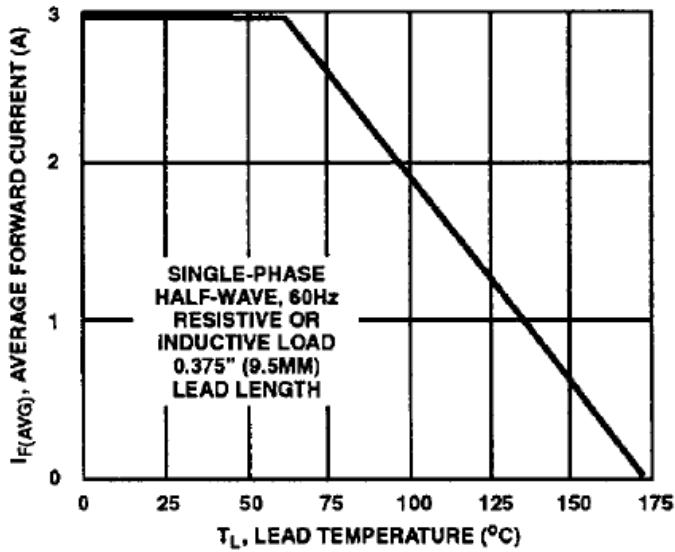


FIGURE 1. MAXIMUM AVERAGE FORWARD OUTPUT CURRENT CHARACTERISTIC

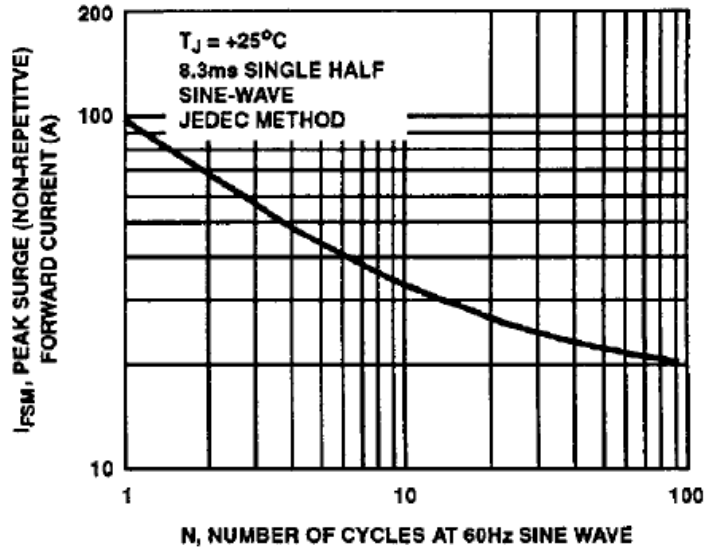


FIGURE 2. MAXIMUM PEAK SURGE (NON-REPETITIVE) FORWARD CURRENT CHARACTERISTIC

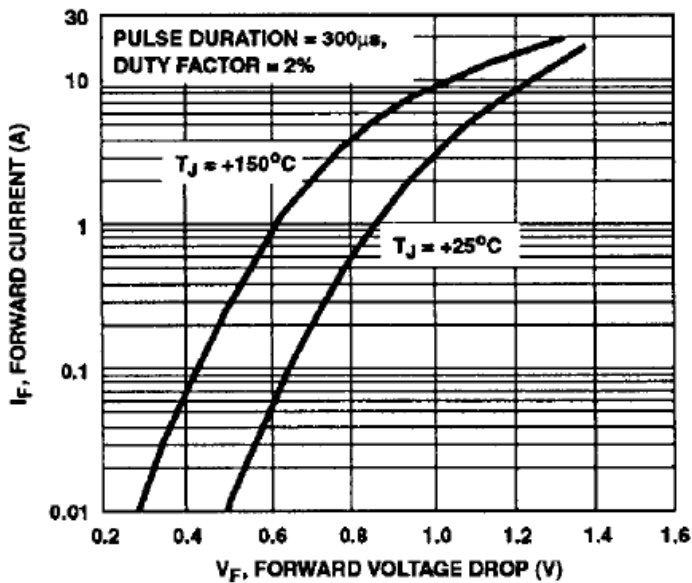


FIGURE 3. TYPICAL INSTANTANEOUS FORWARD CURRENT CHARACTERISTIC

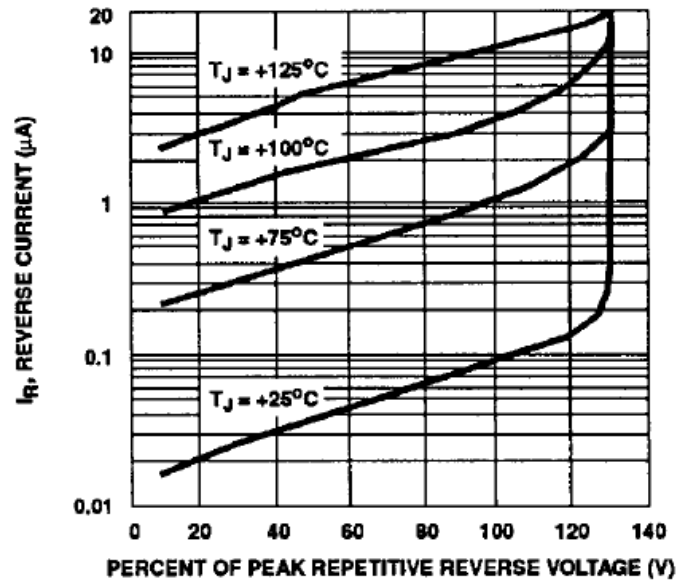


FIGURE 4. TYPICAL REVERSE LEAKAGE CURRENT CHARACTERISTICS

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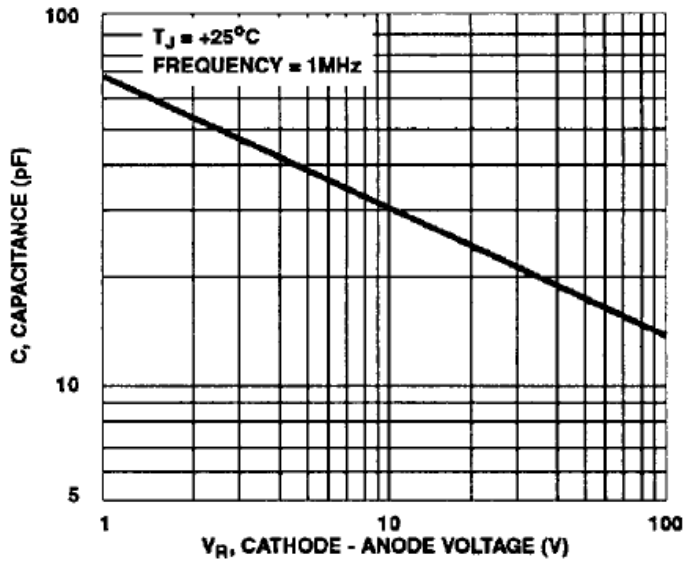


FIGURE 5. TYPICAL JUNCTION CAPACITANCE CHARACTERISTIC

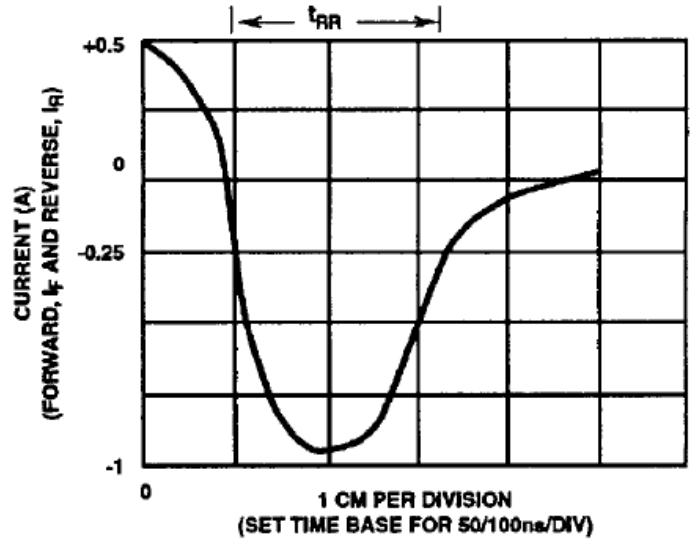
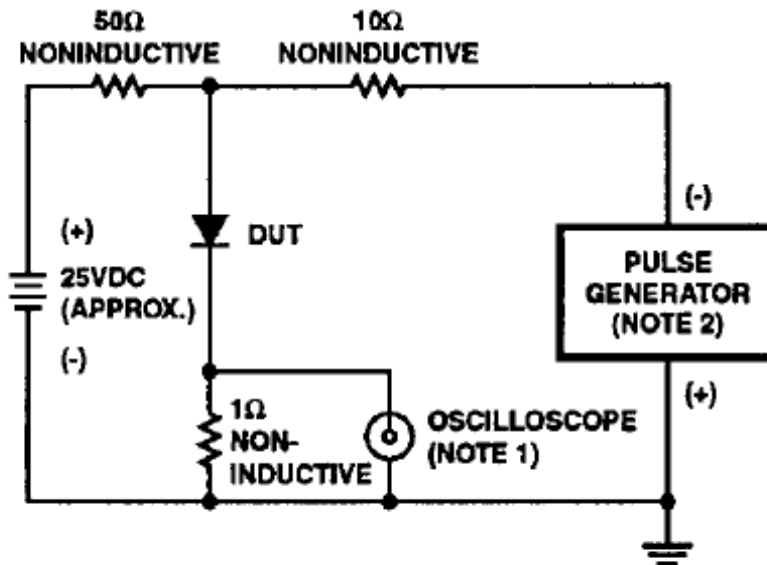


FIGURE 6. REVERSE-RECOVERY TIME WAVEFORM



NOTES:

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

FIGURE 7. REVERSE-RECOVERY TIME TEST CIRCUIT