CITC

FR1505 THRU FR1510

## 1.5A Leaded Type Fast Rectifiers

■ Features

- Axial lead type devices for through hole design.
- High current capability.
- Fast switching for high efficiency.
- High surge current capability.
- Glass passivated chip junction.
- Suffix "G" indicates Halogen free parts, ex. FR1505G
- Lead-free parts meet environmental standards of
   MIL-STD-19500 /228

■ Outline

DO-15(DO-204AC)

.140 (3.6)
.104 (2.6) DIA.

1.0 (25.4) MIN.

Marking code

.300 (7.6)
.230 (5.8)

1.0 (25.4) MIN.

.034 (0.9)
.028 (0.7) DIA.

■ Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, DO-204AC / DO-15
- Lead : Axial leads, solderable per MIL-STD-202,
         Method 208 guranteed
- Polarity : Color band denotes cathode end
- Weight : Approximated 0.39 gram
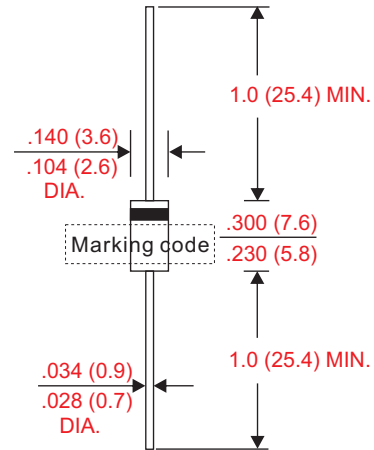
Dimensions in inches and (millimeters)

■ Maximum ratings and electrical characteristics

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter	Conditions	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	0.375"(9.5mm) lead length at T_A = 75°C	I_O			1.5	A
Forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC method)	I_{FSM}			50	A
Reverse current	V_R = V_{RRM} T_A = 25°C	I_R			5.0	uA
	V_R = V_{RRM} T_A = 125°C				100	
Thermal resistance	Junction to ambient	$R_{\theta JA}$		50		^{o}C/W
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	C_J		30		pF
Storage temperature		T_{STG}	-55		+150	^{o}C

Symbol	Marking code	Max. repetitive peak reverse voltage V_{RRM} (V)	Max. RMS voltage V_{RMS} (V)	Max. DC blocking voltage V_R (V)	Max. forward voltage @1.5A, T_A = 25°C V_F (V)	Max. reverse recovery time(1) T_{rr} (ns)	Operating temperature T_J (^{o}C)
FR1505	FR1505	50	35	50	1.30	150	-55 ~ +150
FR151	FR151	100	70	100			
FR152	FR152	200	140	200			
FR154	FR154	400	280	400			
FR156	FR156	600	420	600		250	
FR158	FR158	800	560	800		500	
FR1510	FR1510	1000	700	1000			

Note : 1. I_F = 0.5A, I_R = 1.0A , I_{RR} = 0.25A

■ Rating and characteristic curves

Fig.1 - Forward Current Derating Curve

Average Forward Current (A)
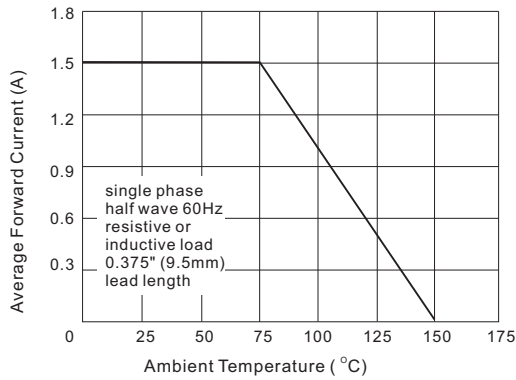
single phase
half wave 60Hz
resistive or
inductive load
0.375" (9.5mm)
lead length

Ambient Temperature (°C)

Fig. 2 - Maximum Non-Repetitive Peak
Forward Surge Current

Peak Forward Surge Current (A)

Number of Cycles at 60 Hz
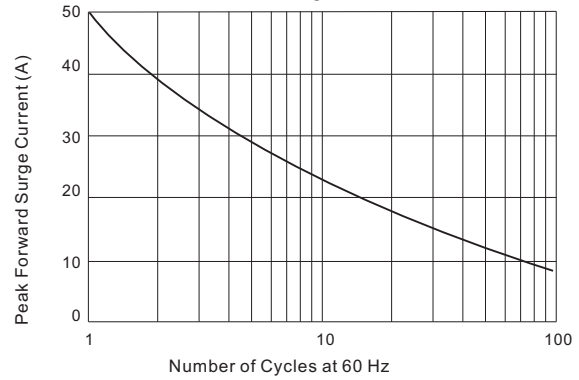
Fig. 3 - Typical Instantaneour Forward
Characteristics

Instantaneous Forward Current (A)

$T_J=25^\circ C$

pulse width = 300us
1% duty cycle

Instantaneous Forward Voltage (Volts)
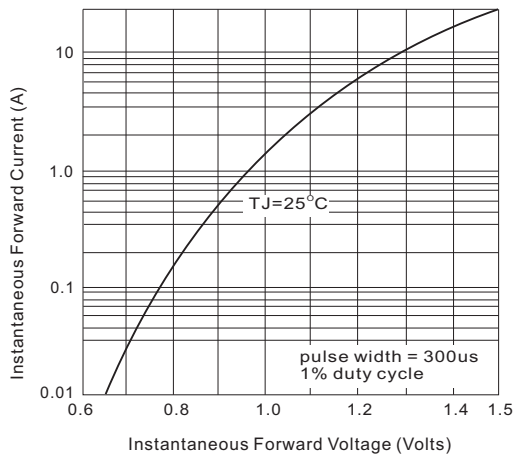
Fig. 4 - Typical Reverse Characteristics

Instantaneous Reverse Current (uA)

$T_J=150^\circ C$

$T_J=100^\circ C$

$T_J=25^\circ C$

Percent of Rated Peak Reverse Voltage (%)

Fig. 5 - Typical Junction Capacitance

Junction Capacitance (pF)

$T_j=25^\circ C$

Reverse Voltage (Volts)
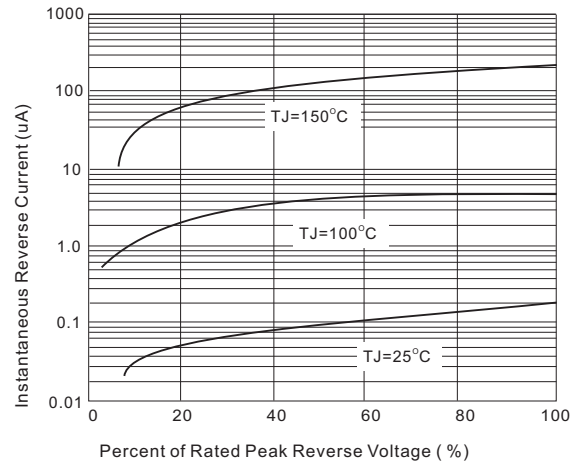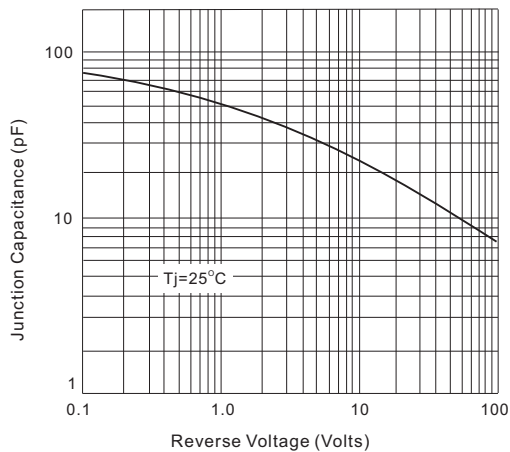
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