MA3DF47

Silicon mesa type

For high frequency rectification
For plasma display panel drive

■ Features

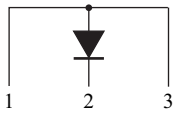
- Super high speed switching characteristic (t_{rr} = 13 ns typ.)
- Soft recovery

■ Package

- Code
  TO-220D-A1
- Pin Name
  1: Anode
  2: Cathode
  3: Anode

■ Marking Symbol: MA3DF47

■ Internal Connection



■ Absolute Maximum Ratings T_a = 25°C

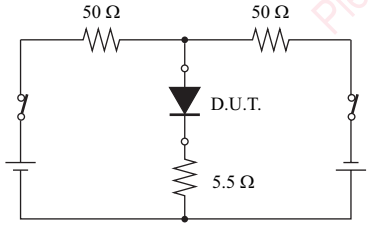
Parameter	Symbol	Rating	Unit
Repetitive peak reverse voltage	V_{RRM}	370	V
Non-repetitive peak reverse surge voltage *1	V_{RSM}	460	V
Forward current (Average) *2	$I_{F(AV)}$	20	A
Repetitive peak forward current *3	I_{FRM}	150	A
Non-repetitive peak forward surge current *4	I_{FSM}	100	A
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	–40 to +150	°C

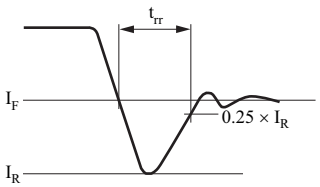
Note) ∗1: 60 Hz half-sine wave. (If repeative, RMS voltage < 370 V)
∗2: T_C = 25°C
∗3: Pulse width < 10 µs. Peak value of the sine wave. (If repeative, RMS current < 20 A)
∗4: 50 Hz sine wave 1 cycle (Non-repetitive peak current)

■ Electrical Characteristics T_a = 25°C±3°C

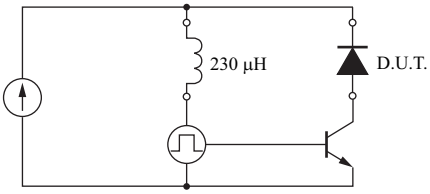
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Forward voltage	V_F	I_F = 20 A		1.65	1.85	V
Reverse current	I_{RRM}	V_{RRM} = 370 V			10	µA
Reverse recovery time *	t_{rr} *1	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		13	20	ns
	t_{rr} *2	I_F = 40 A, di/dt = –200 A/µs, I_{rr} = I_R × 0.5 A		25	30	
Thermal resistance (j-c)	$R_{th(j-c)}$				3.0	°C/W
Thermal resistance (j-a)	$R_{th(j-a)}$				63	°C/W

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7031 measuring methods for diodes.
2. Absolute frequency of input and output is 10 MHz
3. This product is sensitive to electric shock (static electricity, etc.). Due attention must be paid on the charge of a human body and the leakage of current from the operating equipment.
4. ∗1: R-loadt_{rr} measurement circuit



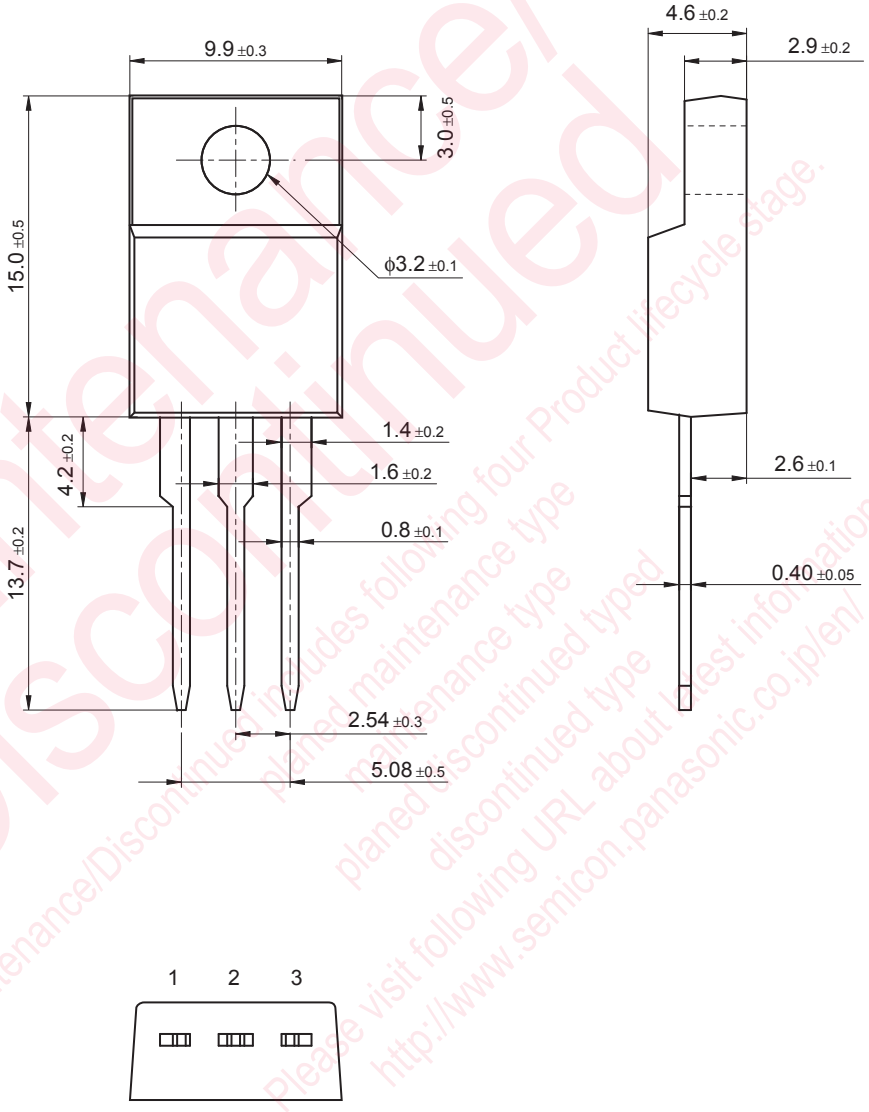


∗2: L-loadt_{rr} measurement circuit



TO-220D-A1

Unit: mm



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