INTERNATIONAL RECTIFIER IOR

1N2054, 1N3735 SERIES

250 Amp Avg Power Silicon Rectifier Diodes

Major Ratings and Characteristics

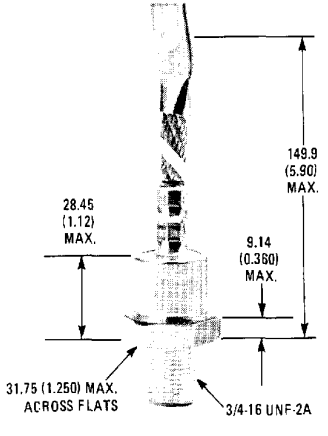
	1N2054	1N3735	Units
$I_{F(AV)}$	250*	250*	A
@ Max. T_C	135*	130*	°C
I_{FSM} @50 Hz	4300	4300	A
@60 Hz	4500*	4500*	
I^2t @50 Hz	92500	92500	A^2s
@60 Hz	84500	84500	
$I^2\sqrt{t}$	1300000	1300000	$A^2\sqrt{s}$
V_{RRM} Range	50*-1000*	100*-1200*	V

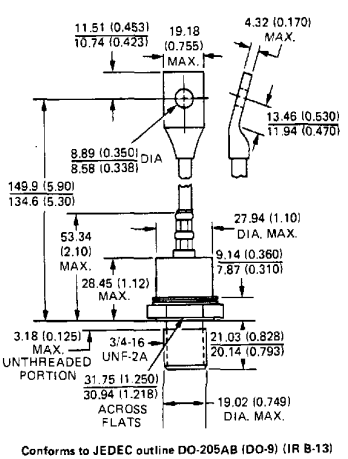
*JEDEC registered values.

Description and Features

- Popular DO-9 package
- Voltage ratings from 50 to 1200 volts

CASE STYLE AND DIMENSIONS





Conforms to JEDEC outline DO-205AB (DO-9) (IR B-13)
Dimensions in Millimeters and (Inches)
Refer to page B-78 for additional case style.

VOLTAGE RATINGS

Part Number		V_{RRM} – Max. Repetitive Peak Reverse Voltage (V)	V_{RSM} – Max. Non-repetitive Peak Reverse Voltage $t_p \leq 5$ ms (V)	V_R – Max. Direct Reverse Voltage (V)	$I_{R(AV)}$ Max. Average Reverse Current @ Max. Rated $I_{F(AV)}$ and V_{RRM} 1 Phase Operation (mA)
Cathode-to-Stud	Anode-to-Stud				
		T_C = –65 to 200°C		T_C = –65 to 200°C	T_C = 135°C
1N2054	1N2054R	50*	–	40*	25*
1N2055	1N2055R	100*	–	80*	25*
1N2057	1N2057R	200*	–	160*	17*
1N2059	1N2059R	300*	–	240*	17*
1N2061	1N2061R	400*	–	320*	17*
1N2064	1N2064R	600*	–	480*	17*
1N2066	1N2066R	800*	–	640*	16*
1N2067	1N2067R	900*	–	720*	14*
1N2068	1N2068R	1000*	–	800*	12*
		T_C = –40 to 200°C	T_C = 25 to 200°C	T_C = –40 to 200°C	T_C = 130°C
1N3735	1N3735R	100*	200*	100*	16*
1N3736	1N3736R	200*	300*	200*	16*
1N3737	1N3737R	300*	400*	300*	16*
1N3738	1N3738R	400*	525*	400*	16*
1N3739	1N3739R	500*	650*	500*	13*
1N3740	1N3740R	600*	800*	600*	12*
1N3741	1N3741R	800*	1050*	800*	9*
1N3742	1N3742R	1000*	1300*	1000*	7*
1N3743 ①	1N3743R ①	1200*	1600*	1200*	7*

ELECTRICAL SPECIFICATIONS

		1N2054	1N3735	Units	Conditions
$I_{F(AV)}$	Max. average forward current	250*	250*	A	1 phase operation, 180° conduction 1N2050 series: max. T_C = 135°C 1N3735 series: max. T_C = 130°C
I_{FSM}	Max. peak one-cycle non-repetitive surge current	4300	4300	A	Half cycle 50 Hz sine wave or 6 ms rectangular pulse — Following any rated load condition and with rated V_{RRM} applied
		4500*	4500*		Half cycle 60 Hz sine wave or 5 ms rectangular pulse
		5100	5100		Half cycle 50 Hz sine wave or 6 ms rectangular pulse — Following any rated load condition and with V_{RRM} applied following surge = 0.
		5350	5350		Half cycle 60 Hz sine wave or 5 ms rectangular pulse
I^2t	Max. I^2t for fusing	92,500	92,500	A^2s	t = 10 ms — With rated V_{RRM} applied following surge, initial T_J = 200°C
		84,500	84,500		t = 8.3 ms
	Max. I^2t for individual device fusing	130,000	130,000		t = 10 ms — With V_{RRM} = 0 following surge, initial T_J = 200°C
		120,000	120,000		t = 8.3 ms
$I^2\sqrt{t}$	Max. $I^2\sqrt{t}$ for individual device fusing ②	1,300,000	1,300,000	$A^2\sqrt{s}$	t = 0.1 to 10 ms, V_{RRM} = 0 following surge.
V_{FM}	Max. peak forward voltage	1.25*	–	V	$I_{F(AV)}$ = 250A (785A peak), T_C = 135°C*
		–	1.3*	V	$I_{F(AV)}$ = 250A (785A peak), T_C = 130°C*

THERMAL-MECHANICAL SPECIFICATIONS

T_C	Max. operating case temperature range	-65* to 200*	-40* to 200*	°C	
T_{stg}	Max. storage temperature range	-65* to 200*	-40* to 200*	°C	
R_{thJC}	Max. internal thermal resistance, junction-to-case	0.18*	0.18*	deg C/W	DC operation.
		–	0.24*		One- and three-phase operation.
		–	0.30*		Six-phase operation.
R_{thCS}	Thermal resistance, case-to-sink	0.08	0.08	deg C/W	Mounting surface flat, smooth and greased.
T	Mounting torque	31.1–36.7 (275–325)		N-m (lbf-in.)	
wt	Approximate weight	213 (7.5)		g (oz)	
Case Style		DO-205AB (DO-9) (IR B-13) ①			JEDEC

*JEDEC registered values.

① 1N3743,R may be furnished in DO-9 (IR B-6) package.

② I^2t for time $t_x = I^2\sqrt{t} \cdot \sqrt{t_x}$.

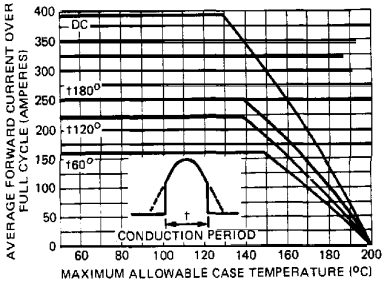


Fig. 1 – Average Forward Current Vs. Maximum Allowable Case Temperature (Sinusoidal Current Waveform)

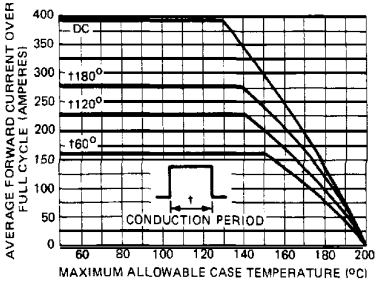


Fig. 2 – Average Forward Current Vs. Maximum Allowable Case Temperature (Rectangular Current Waveform)

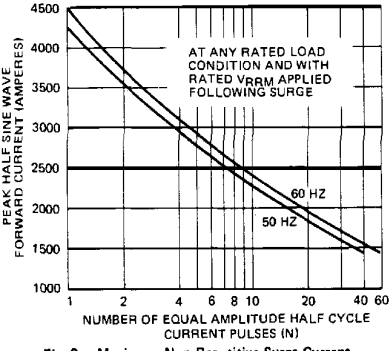


Fig. 3 – Maximum Non-Repetitive Surge Current Vs. Number of Current Pulses

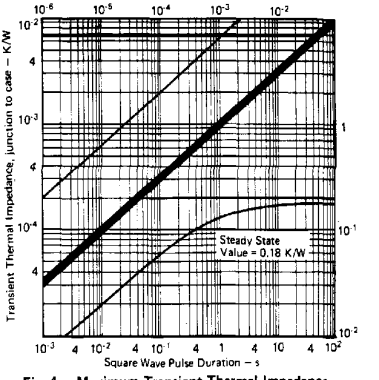


Fig. 4 – Maximum Transient Thermal Impedance, Junction-to-Case Vs. Pulse Duration

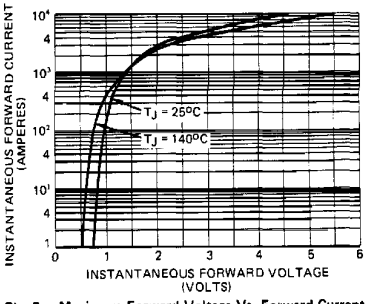


Fig. 5 – Maximum Forward Voltage Vs. Forward Current

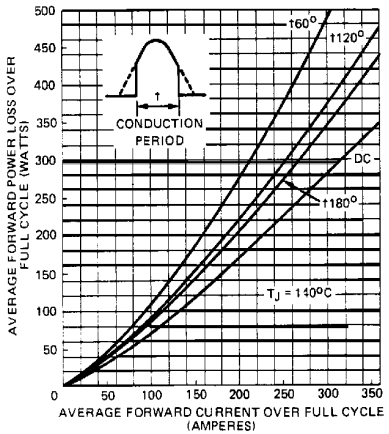


Fig. 6 – Maximum Low Level Forward Power Loss Vs. Average Forward Current (Sinusoidal Current Waveform)

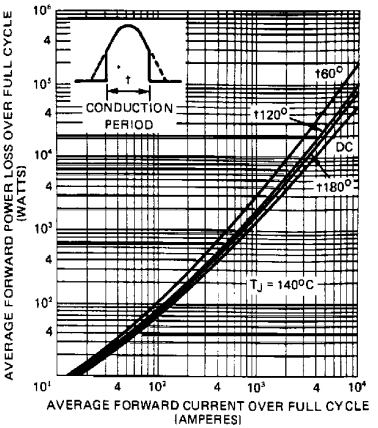


Fig. 7 – Maximum High Level Forward Power Loss Vs. Average Forward Current (Sinusoidal Current Waveform)

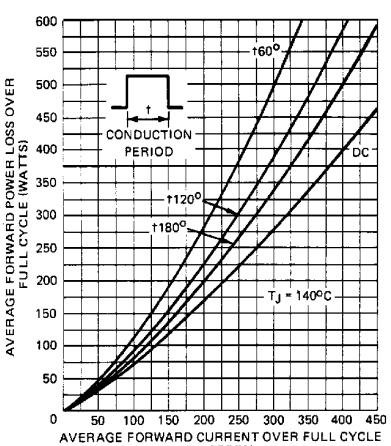


Fig. 8 – Maximum Low Level Forward Power Loss Vs. Average Forward Current (Rectangular Current Waveform)

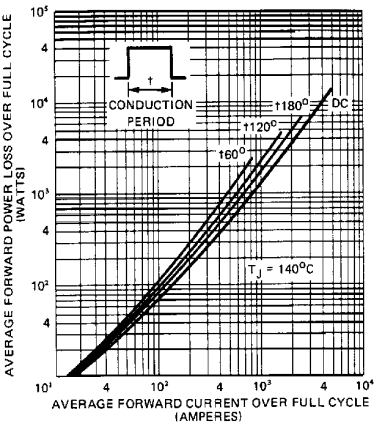
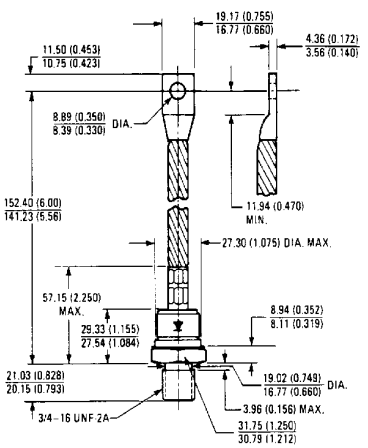


Fig. 9 – Maximum High Level Forward Power Loss Vs. Average Forward Current (Rectangular Current Waveform)



Conforms to JEDEC outline DO-205AB (DO-9) (IR B-6)

All Dimensions in Millimeters and (inches)

单击下面可查看定价，库存，交付和生命周期等信息

>>Vishay(威世)