

SEMICONDUCTOR TECHNICAL DATA

1N4004

General Purpose Plastic Rectifier

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- \cdot Construction utilizes void-free molded plastic technique.
- \cdot Low reverse leakage.
- · High forward surge capability.
- High temperature soldering guaranteed: 250 °C/10 seconds, 0.375 (9.5mm) lead length, 5 Ibs. (2.3kg) tension.
- \cdot Tj is 150 °C(Max.) and Tstg is 175 °C(Max.) with PI glue

APPLICATIONS

- \cdot General purpose rectification of power supply application
- \cdot Consumer & automotive application

MAXIMUM RATING (Ta=25°C)

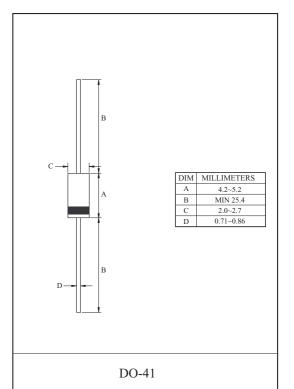
CHARACTERISTIC	SYMBOL	RATING	UNIT	
Repetitive Peak Reverse Voltage	V _{RRM}	400	V	
RMS Voltage	V _{RMS}	V _{RMS} 280		
DC Blocking Voltage	V _{DC}	400	V	
Average Forward Rectified Current	I _{F(AV)} *	1	А	
Peak forward surge current 8.3mS single half sine-wave superimposed on rated load (JEDEC Method) Ta=50 °C	I _{FSM}	30	А	
Operation Junction	Tj	-55~125	°C	
Storage Temperature Range	T _{stg}	-55~150	ĉ	

* 0.375 (9.5mm) lead length at Ta= 50 $^{\circ}$ C

ELECTRICAL CHARACTERISTICS (Ta=25 °C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Forward Voltage	V _F	I _F =1A	-	-	1.1	V
Leakage Current	I _R	V _{RRM} =400V	-	-	5.0	μΑ
		V _{RRM} =400V, Ta=100 °C	-	-	50	
Reverse Recovery Time	t _{rr}	I _{FM} =20mA, I _{FM} =1mA	-	1.0	-	μs
Junction Capacitance	C_j	V _{RM} =4.0V, f=1MHz	-	15	-	pF
Thermal Resistance —	R _{th(j-a)}	Junction to ambient	-	50	-	°C/W
	R _{th(j-l)}	Junction to lead	-	25	-	

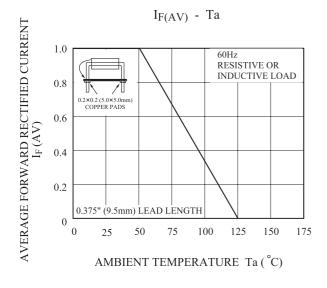
Note 1) Thermal resistance from junction to ambient at 0.375 (9.5mm) lead length P.C.B mounted.



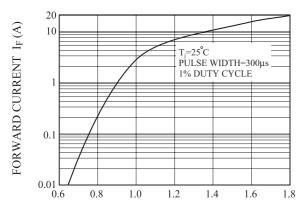
Marking



1N4004

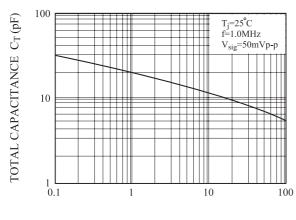


I_F - V_F

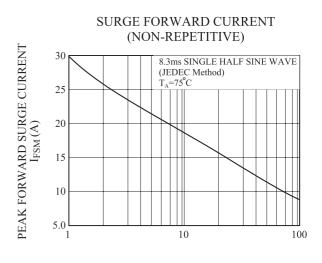


FORWARD VOLTAGE V_F (V)



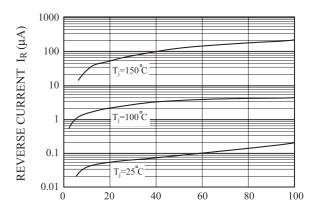


REVERSE VOLTAGE V_R (V)



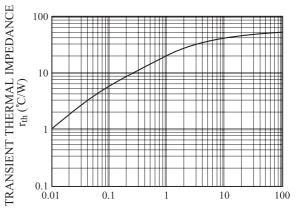
NUMBER OF CYCLES AT 60Hz

TYPICAL REVERSE CHARACTERISTICS



PERCENTAGE OF PEAK REVERSE VOLTAGE (%)

r_{th} - t_w



PULSE DURATION $t_w(s)$