

1N4001, 1N4002, 1N4003, 1N4004, 1N4005, 1N4006, 1N4007

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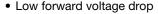
Vishay General Semiconductor

General Purpose Plastic Rectifier



PRIMARY CHARACTERISTICS								
I _{F(AV)}	1.0 A							
V _{RRM}	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V							
I _{FSM} (8.3 ms sine-wave)	30 A							
I _{FSM} (square wave t _p = 1 ms)	45 A							
V _F	1.1 V							
I _R	5.0 μΑ							
T _J max.	150 °C							
Package	DO-41 (DO-204AL)							
Circuit configuration	Single							

FEATURES





· High forward surge capability

• Solder dip 275 °C max. 10 s, per JESD 22-B106

Material categorization: for definitions of compliance please see www.vishav.com/doc?99912





TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters, and freewheeling diodes application.

MECHANICAL DATA

Case: DO-41 (DO-204AL), molded epoxy body Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: matte tin plated leads, solderable per

J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test **Polarity:** color band denotes cathode end

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)										
PARAMETER	SYMBOL	1N4001	1N4002	1N4003	1N4004	1N4005	1N4006	1N4007	UNIT	
Maximum repetitive peak reverse vo	V_{RRM}	50	100	200	400	600	800	1000	V	
Maximum RMS voltage		V _{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V _{DC}	50	100	200	400	600	800	1000	V	
Maximum average forward rectified 0.375 " (9.5 mm) lead length at $T_A =$	I _{F(AV)}	1.0							Α	
Peak forward surge current 8.3 ms s sine-wave superimposed on rated lo	I _{FSM}	30						А		
Non-repetitive peak forward	t _p = 1 ms		45							
surge current square waveform	$t_p = 2 \text{ ms}$	I _{FSM}	35							
$T_A = 25 ^{\circ}\text{C (fig. 3)}$ $t_p = 5 \text{ms}$		30							1	
Maximum full load reverse current, f average 0.375" (9.5 mm) lead length	I _{R(AV)}	30						μА		
Rating for fusing (t < 8.3 ms)	I ² t ⁽¹⁾	3.7						A ² s		
Operating junction and storage temperature range	T _J , T _{STG}	-50 to +150							°C	

Note

(1) For device using on bridge rectifier application



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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)											
PARAMETER	TEST	CONDITIONS	SYMBOL	1N4001	1N4002	1N4003	1N4004	1N4005	1N4006	1N4007	UNIT
Maximum instantaneous forward voltage	1.0	4	V _F	1.1					V		
Maximum DC reverse current		T _A = 25 °C	I_	5.0							
at rated DC blocking voltage		T _A = 125 °C	I _R				50				μA
Typical junction capacitance	4.0 \	V, 1 MHz	CJ	15					pF		

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL 1N4001 1N4002 1N4003 1N4004 1N4005 1N4006 1N4007 UNI						UNIT		
Typical thermal resistance	R _{0JA} (1)	50							°C/W
Typical thermal resistance	R _{0JL} (1)	25						C/VV	

Note

⁽¹⁾ Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, PCB mounted

ORDERING INFORMATION (Example)									
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE					
1N4004-E3/54	0.33	54	5500	13" diameter paper tape and reel					
1N4004-E3/73	0.33	73	3000	Ammo pack packaging					

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25$ °C unless otherwise noted)

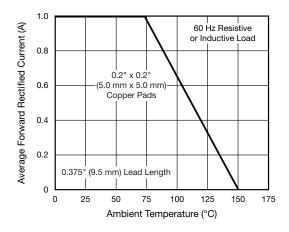


Fig. 1 - Forward Current Derating Curve

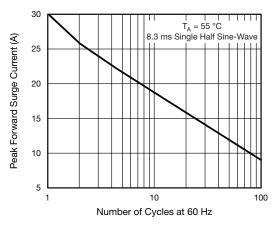


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

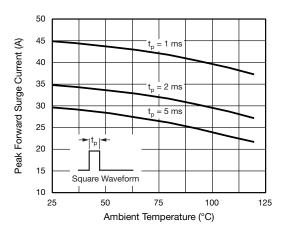


Fig. 3 - Non-Repetitive Peak Forward Surge Current

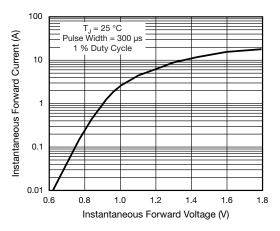


Fig. 4 - Typical Instantaneous Forward Characteristics

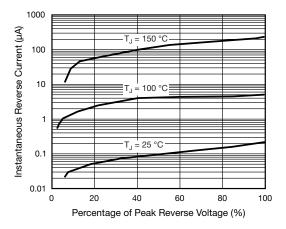


Fig. 5 - Typical Reverse Characteristics

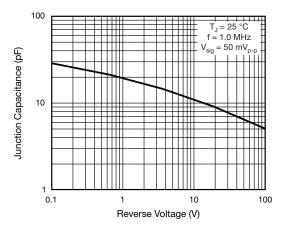


Fig. 6 - Typical Junction Capacitance

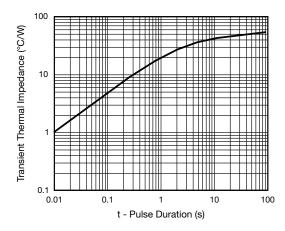


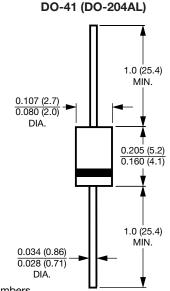
Fig. 7 - Typical Transient Thermal Impedance

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Note

• Lead diameter is $\frac{0.026 (0.66)}{0.023 (0.58)}$ for suffix "E" part numbers



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