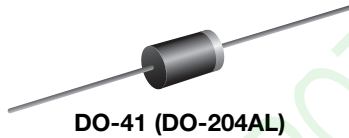


General Purpose Plastic Rectifier



FEATURES

- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106



RoHS
COMPLIANT

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 μ A
T_J max.	150 °C
Package	DO-41 (DO-204AL)
Circuit configuration	Single

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 voltage	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 current 0.375" (9.5 mm) lead length at $T_A = 75\text{ }^{\circ}\text{C}$	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30							A
Non-repetitive peak forward surge current square waveform $T_A = 25\text{ }^{\circ}\text{C}$ (fig. 3)	$t_p = 1\text{ ms}$	45							A
	$t_p = 2\text{ ms}$	35							
	$t_p = 5\text{ ms}$	30							
Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length $T_L = 75\text{ }^{\circ}\text{C}$	$I_{R(AV)}$	30							μA
Rating for fusing ($t < 8.3\text{ ms}$)	$I^2t\text{ }^{(1)}$	3.7							A^2s
Operating junction and storage temperature range	T_J, T_{STG}	-50 to +150							$^{\circ}\text{C}$

Note

⁽¹⁾ For device using on bridge rectifier application

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

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ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	1N4001	1N4002	1N4003	1N4004	1N4005	1N4006	1N4007	UNIT
Maximum instantaneous forward voltage	1.0 A		V _F	1.1							V
Maximum DC reverse current at rated DC blocking voltage		T _A = 25 °C	I _R	5.0							μA
		T _A = 125 °C		50							
Typical junction capacitance	4.0 V, 1 MHz		C _J	15							pF

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	1N4001	1N4002	1N4003	1N4004	1N4005	1N4006	1N4007	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$	50							°C/W
	$R_{\theta JL}^{(1)}$	25							

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 ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

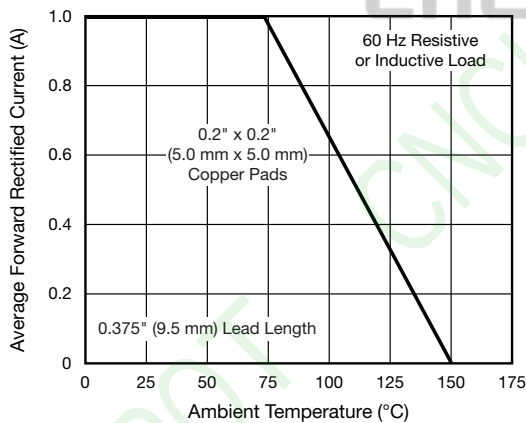


Fig. 1 - Forward Current Derating Curve

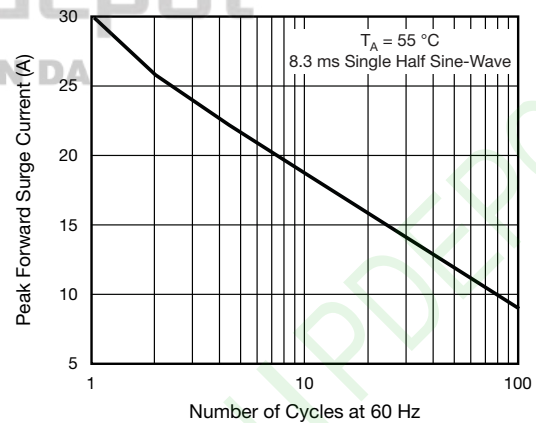


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

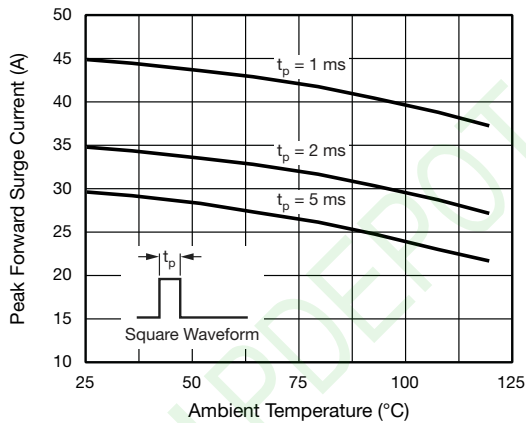


Fig. 3 - Non-Repetitive Peak Forward Surge Current

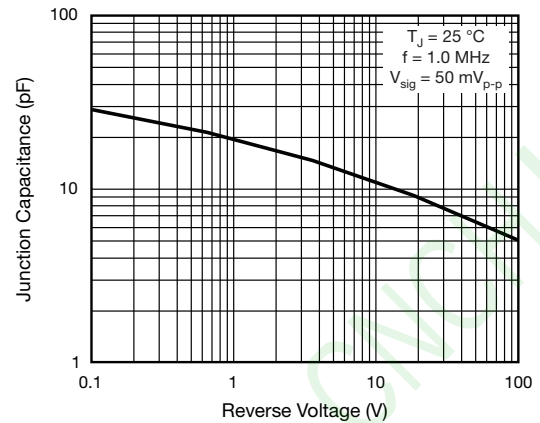


Fig. 6 - Typical Junction Capacitance

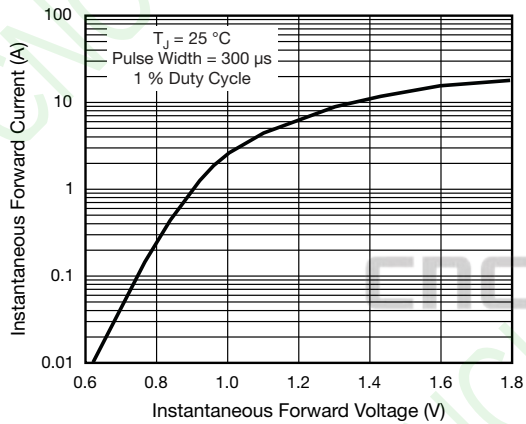


Fig. 4 - Typical Instantaneous Forward Characteristics

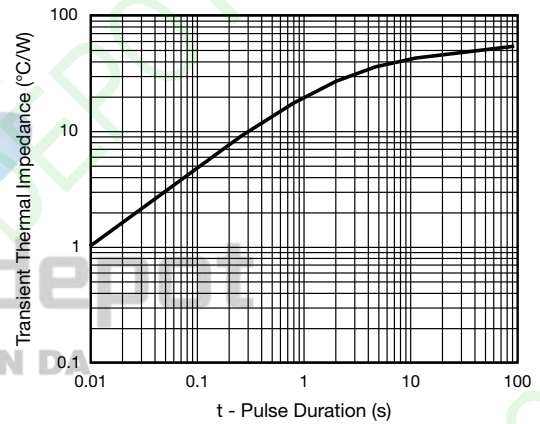


Fig. 7 - Typical Transient Thermal Impedance

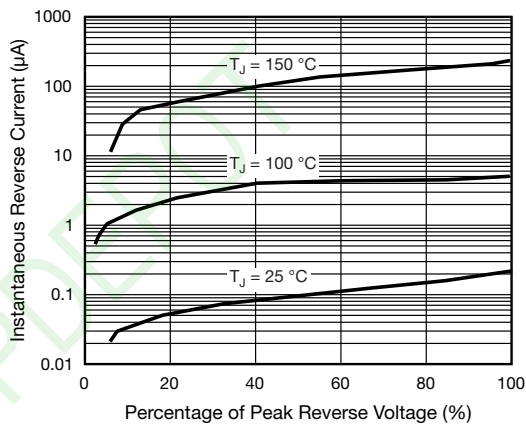
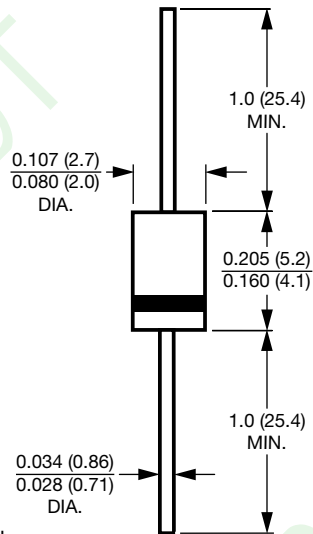


Fig. 5 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-41 (DO-204AL)



Note

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

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Product Portfolio

Primary Category	Secondary Category	Series	Model	Package	Link
Diode	Rectifier Diode	1N4007	1N4007	SMA(DO-214AC)	https://www.cnchipdepot.com/p/fosan-1n4007-107172.html
Diode	Rectifier Diode	1N4007	1N4007	SOD-123FL	https://www.cnchipdepot.com/p/fosan-1n4007-107173.html
Diode	Switching Diode	BAW56	BAW56	SOT-23	https://www.cnchipdepot.com/p/fosan-baw56-107174.html
Diode	Switching Diode	BAW56	BAW56W-6AF	SOT-323	https://www.cnchipdepot.com/p/fosan-baw56w-6af-107175.html

Diode	Switching Diode	1N4148	1N4148WT	SOD-323	https://www.cnchipdepot.com/p/fosan-1n4148wt-107176.html
Diode	Schottky Diode	1N5819	1N4148WS	SOD-323	https://www.cnchipdepot.com/p/fosan-1n4148ws-107177.html
Diode	Schottky Diode	SS34	SS34	SMA(DO-214AC)	https://www.cnchipdepot.com/p/fosan-ss34-107178.html
Diode	Schottky Diode	SS54	SS34B	SMA(DO-214AC)	https://www.cnchipdepot.com/p/baocheng-ss34b-12183.html
Diode	Schottky Diode	SS14	SS34C	SMA(DO-214AC)	https://www.cnchipdepot.com/p/baocheng-ss34c-12188.html
Diode Fast Recovery / High Efficiency Diode		US1M	US1M	SMA	https://www.cnchipdepot.com/p/fosan-us1m-107198.html
Diode Fast Recovery / High Efficiency Diode		US1M	US1MA-AAF	SMA	https://www.cnchipdepot.com/p/fosan-us1ma-aaf-107179.html
Diode Fast Recovery / High Efficiency Diode		US1M	US1MF	SMAF	https://www.cnchipdepot.com/p/baocheng-us1mf-17709.html
Diode	Switching Diode	BAV99	BAV99	SOT-23	https://www.cnchipdepot.com/p/agertech-bav99-18862.html
Diode	Switching Diode	BAV99	BAV99-6AF	SOT-23	https://www.cnchipdepot.com/p/fosan-ss34-107178.html
Diode	Switching Diode	BAV99	BAV99W-6AF	SOT-23	https://www.cnchipdepot.com/p/fosan-bav99w-6af-107181.html
Diode	Schottky Diode	B5819W	B5819WS	SOD-123	https://www.cnchipdepot.com/p/am-b5819ws-12167.html
Diode	Schottky Diode	B5819W	B5819W		https://www.cnchipdepot.com/p/am-b5819w-12166.html
Transistor (BJT)	NPN BJT	S8050	S8050	SOT-23	https://www.cnchipdepot.com/p/am-s8050-1108.html

Transistor (BJT)	NPN BJT	S8050	S8050-6AF	SOT-23	https://www.cnchipdepot.com/p/fosan-s8050-6af-107182.html
Transistor (BJT)	NPN BJT	SS8050	SS8050	SOT-23	https://www.cnchipdepot.com/p/alj-longjing-micro-s8050-1087.html
Transistor (BJT)	NPN BJT	SS8050	SS8050S	SOT-23	https://www.cnchipdepot.com/p/fosan-ss8050s-2326.html
Transistor (BJT)	NPN BJT	MMBT5551	MMBT5551	SOT-23	https://www.cnchipdepot.com/p/agertech-mmbt5551-1003.html
Transistor (BJT)	NPN BJT	MMBT5551	MMBT5551S	SOT-23	https://www.cnchipdepot.com/p/fosan-mmbt5551s-2327.html
Transistor (BJT)	NPN BJT	MMBT5551	MMBT5551-6AF	SOT-23	https://www.cnchipdepot.com/p/fosan-mmbt5551-6af-107183.html
Transistor	MOSFET	7002	2N7002	SOT-23	https://www.cnchipdepot.com/p/fosan-2n7002-107184.html
Transistor	MOSFET	7002	2N7002K	SOT-23	https://www.cnchipdepot.com/p/alj-longjing-micro--2n7002k-5083.html
Transistor	MOSFET	7002	2N7002K-6AF	SOT-23	https://www.cnchipdepot.com/p/fosan-2n7002k-6af-107185.html
Transistor	MOSFET	7002	2N7002-6AF	SOT-23	https://www.cnchipdepot.com/p/fosan-2n7002-6af-107186.html
Transistor	MOSFET	BSS84	BSS84	SOT-23	https://www.cnchipdepot.com/p/fosan-bss84-107187.html
Transistor	MOSFET	BSS84	BSS84-6AF	SOT-363	https://www.cnchipdepot.com/p/fosan-bss84-6af-107188.html
Transistor (BJT)	NPN BJT	BC847	BC847A	SOT-23	https://www.cnchipdepot.com/p/alj-longjing-micro--bc847a-1052.html
Transistor (BJT)	NPN BJT	BC847	BC847B	SOT-23	https://www.cnchipdepot.com/p/alj-longjing-micro--bc847b-1056.html

Transistor (BJT)	NPN BJT	BC847	BC847C	SOT-23	https://www.cnchipdepot.com/p/alj-longjing-micro--bc847c-1055.html
Power IC	LDO	1117	LD1117-3.3	SOT223	https://www.cnchipdepot.com/p/hxy-mosfet-huaxuan-yang-electronics--ld1117-3-3-25490.html
Power IC	LDO	1117	LD1117-1.8	SOT223	https://www.cnchipdepot.com/p/hxy-mosfet-huaxuan-yang-electronics--ld1117-1-8-25429.html
Power IC	LDO	1117	LD1117-5.0	SOT223	https://www.cnchipdepot.com/p/hxy-mosfet-huaxuan-yang-electronics--ld1117-5-0-25444.html
Power IC	LDO	1117	LD1117-ADJ	SOT223	https://www.cnchipdepot.com/p/hxy-mosfet-huaxuan-yang-electronics--ld1117-adj-25427.html


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