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TECHNICAL DATA SHEET

HIGH RELIABILITY ULTRA FAST RECOVERY RECTIFIER

Qualified per MIL-PRF-19500/550

- 800 Amps Surge Rating
- VRRM 50 to 150 Volts
- 70 Amps Current Rating

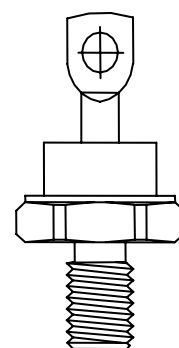
DEVICES

1N6304	1N6304R
1N6305	1N6305R
1N6306	1N6306R

LEVELS
JAN
JANTX
JANTXV

ABSOLUTE MAXIMUM RATINGS ($T_C = +25^\circ\text{C}$ unless otherwise noted)

Parameters / Test Conditions	Symbol	Value	Unit
Peak Repetitive Reverse Voltage 1N6304 / R 1N6305 / R 1N6306 / R	V_{RWM}	50 100 150	V
Peak Working Reverse Voltage 1N6304 / R 1N6305 / R 1N6306 / R	V_{RRM}	50 100 150	V
Average Forward Current, $T_C = 100^\circ$	I_F	70	A
Peak Surge Forward Current @ $t_p = 8.3\text{ms}$, half sinewave, $T_C = 55^\circ\text{C}$	I_{FSM}	800	A
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.8	$^\circ\text{C/W}$
Operating Junction Temperature Range	T_J	-65°C to 175°C	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65°C to 175°C	$^\circ\text{C}$



DO-203AB (DO-5)

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

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Forward Voltage $I_{FM} = 70\text{A}$, $T_C = 25^\circ\text{C}^*$	V_{FM}		0.975	V
Forward Voltage $I_{FM} = 150\text{A}$, $T_C = 25^\circ\text{C}^*$	V_{FM}		1.18	V
Forward Voltage $I_{FM} = 70\text{A}$, $T_C = 150^\circ\text{C}^*$	V_{FM}		0.84	V
Reverse Current $V_{RM} = 50\text{V}$, $T_C = 25^\circ\text{C}$ $V_{RM} = 100\text{V}$, $T_C = 25^\circ\text{C}$ $V_{RM} = 150\text{V}$, $T_C = 25^\circ\text{C}$ 1N6304 / R 1N6305 / R 1N6306 / R	I_{RM}		25	μA
Reverse Current $V_{RM} = 50\text{V}$, $T_C = 150^\circ\text{C}$ $V_{RM} = 100\text{V}$, $T_C = 150^\circ\text{C}$ $V_{RM} = 150\text{V}$, $T_C = 150^\circ\text{C}$ 1N6304 / R 1N6305 / R 1N6306 / R	I_{RM}		30	mA
Reverse Recovery Time $I_F = 0.5\text{A}$, $I_R = 1\text{A}$	T_{rr}		50	ns
Reverse Recovery Time $I_F = 70\text{A}$	T_{rr}		60	ns
Capacitance Junction $V_R = 10\text{V}$, $f = 1\text{MHz}$, $T_J = 25^\circ\text{C}$	C_J		600	pF

* Pulse test: Pulse width 300 μsec , Duty cycle 2%

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GRAPHS

FIGURE 1
TYPICAL FORWARD CHARACTERISTICS

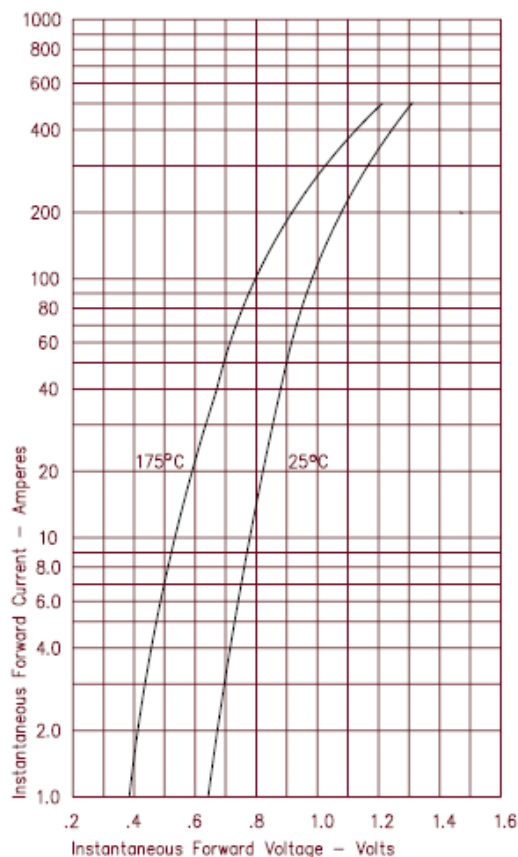


FIGURE 3
TYPICAL JUNCTION CAPACITANCE

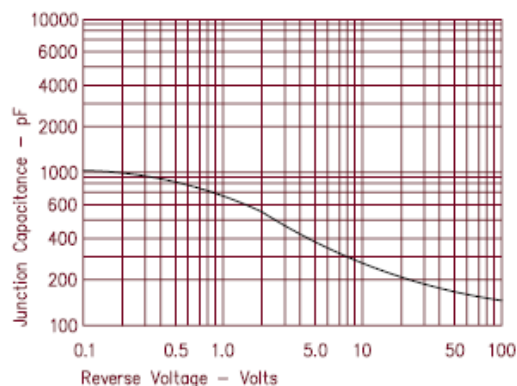


FIGURE 4
FORWARD CURRENT DERATING

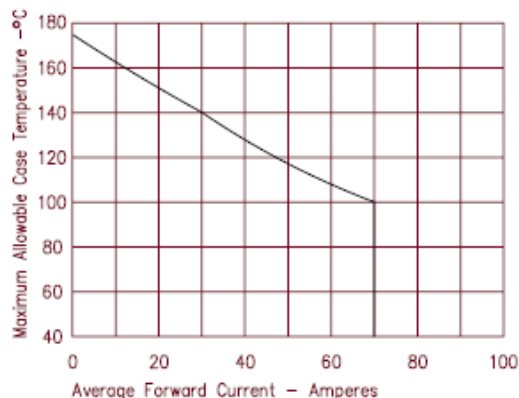
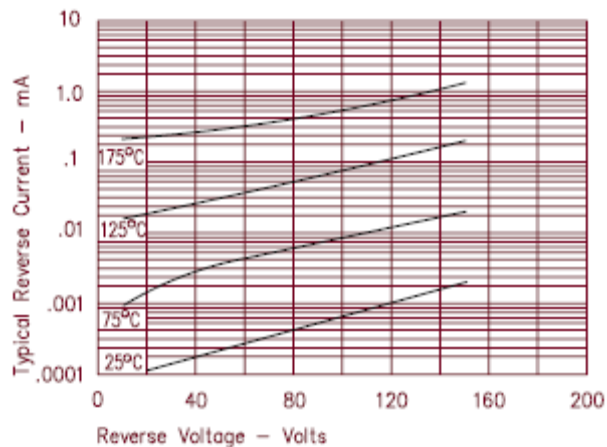
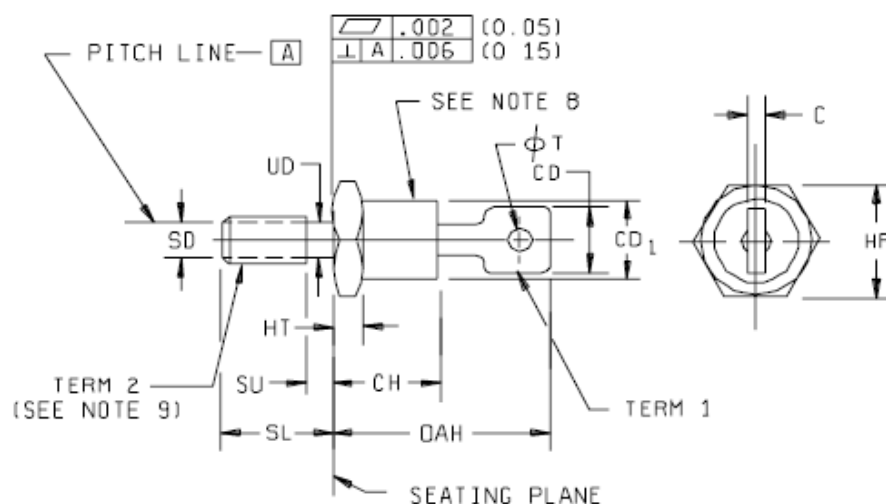


FIGURE 2
TYPICAL REVERSE CHARACTERISTICS



HIGH RELIABILITY ULTRA FAST RECOVERY RECTIFIER

PACKAGE DIMENSIONS



NOTES:

- 1 Dimensions are in inches.
- 2 Millimeter equivalents are given for information only.
- 3 Units must not be damaged by torque of 30 inch-pound applied to .25-28 UNF-2B nut assembled on thread.
- 4 Length of incomplete or undercut threads of UD.
- 5 Maximum pitch diameter of plated threads shall be basic pitch diameter .2268 inch (5.761 mm).
- 6 A chamfer or undercut on one or both ends of the hex portion is optional; minimum base diameter at seating plane .60 inch (15.2 mm).
- 7 The angular orientation and peripheral configuration of terminal 1 is undefined.
- 8 Standard types shall have cathode connected to stud. Reverse types shall have anode connected to stud.
- 9 Term 2 threads in accordance with FED-STD-H28.
- 10 In accordance with ASME Y14.5M, diameters are equivalent to ϕx symbology.

Ltr	Dimensions				Notes
	Inches		Millimeters		
	Min	Max	Min	Max	
CD		.375		9.53	7
C		.080		2.03	
HF	.669	.688	16.99	17.48	
HT	.115	.200	2.92	5.08	
CH		.450		11.43	
OAH	.750	1.00 0	19.05	25.40	
SL	.422	.453	10.72	11.51	
SU		.090		2.29	4
CD ₁		.667		16.94	
SD					5
UD	.220	.249	5.59	6.32	
ØT	.140	.175	3.56	4.45	

Physical dimensions (DO-203AB)

Mouser Electronics

Authorized Distributor

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