TECHNICAL DATA SHEET

6 Lake Street, Lawrence, MA 01841
1-800-446-1158 / (978) 620-2600 / Fax: (978) 689-0803
Website: http://www.microsemi.com

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

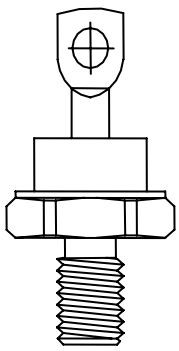
ABSOLUTE MAXIMUM RATINGS (T_C = +25°C unless otherwise noted)

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°		I_F	70	A
Peak Surge Forward Current @ t_p = 8.3ms, half sinewave, T_C = 55°C		I_{FSM}	800	A
Thermal Resistance, Junction to Case		$R_{\theta JC}$	0.8	°C/W
Operating Junction Temperature Range		T_J	-65°C to 175°C	°C
Storage Temperature Range		T_{stg}	-65°C to 175°C	°C

ELECTRICAL CHARACTERISTICS (T_A = +25°C, unless otherwise noted)

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

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



DO-203AB (DO-5)

6 Lake Street, Lawrence, MA 01841
1-800-446-1158 / (978) 620-2600 / Fax: (978) 689-0803
Website: http://www.microsemi.com

TECHNICAL DATA SHEET

HIGH RELIABILITY ULTRA FAST RECOVERY RECTIFIER

GRAPHS

FIGURE 1
TYPICAL FORWARD CHARACTERISTICS

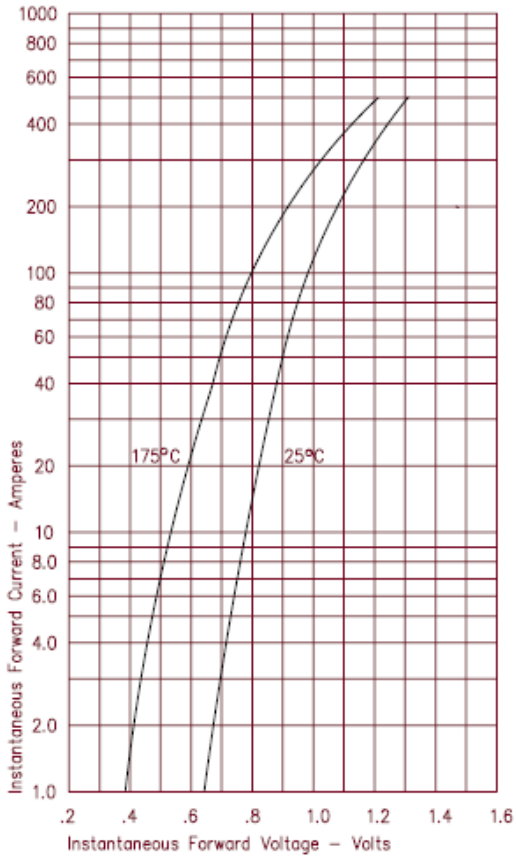


FIGURE 2
TYPICAL REVERSE CHARACTERISTICS

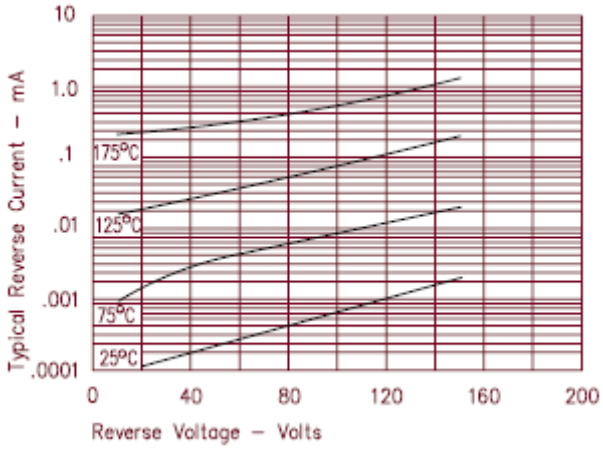


FIGURE 3
TYPICAL JUNCTION CAPACITANCE

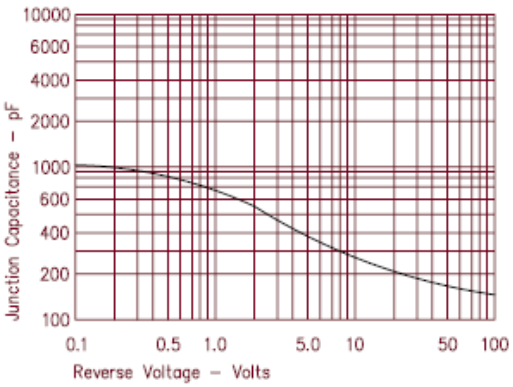
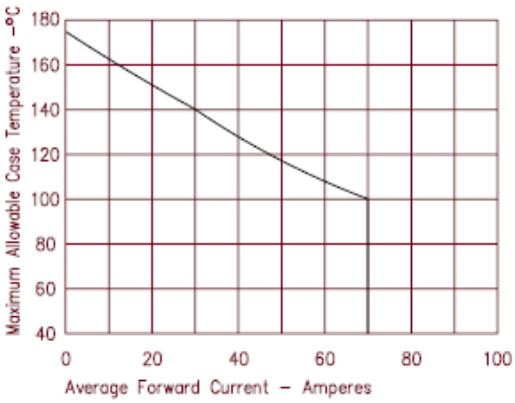


FIGURE 4
FORWARD CURRENT DERATING

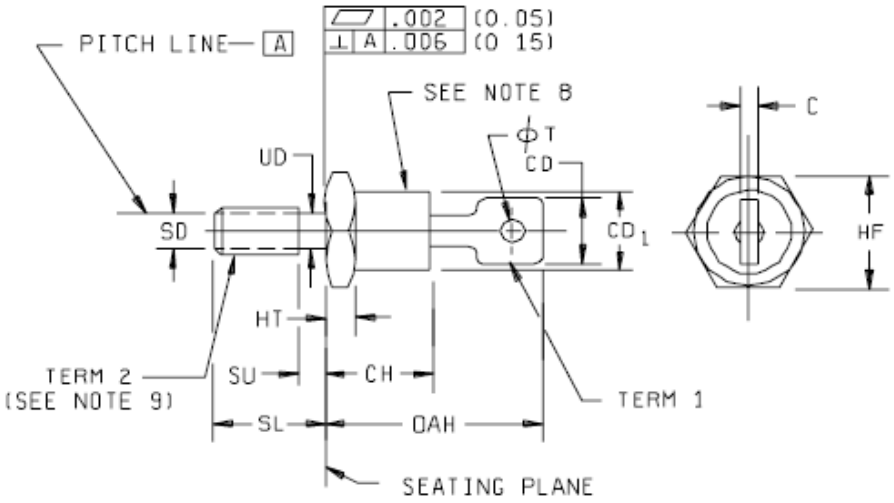


6 Lake Street, Lawrence, MA 01841
1-800-446-1158 / (978) 620-2600 / Fax: (978) 689-0803
Website: http://www.microsemi.com

TECHNICAL DATA SHEET

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	1.000	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	
θT	.140	.175	3.56	4.45	

Physical dimensions (DO-203AB)