

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Part number	Reverse voltage V_R (V)	Working peak reverse voltage V_{RWM} (V)	Operating current I_O (Note 1) (mA)	Peak forward surge current I_{FSM} (Note 2) (A)	$R_{\theta JL}$ $L=0.375"$ ($^\circ\text{C/W}$)	T_{OP} T_{stg} ($^\circ\text{C}$)
1N6638	150	125	300	2.5	160	-65 to +175
1N6642	100	75	300	2.5	160	
1N6643	75	50	300	2.5	160	

Note 1: At maximum end cap temperature = 110°C for US suffix types.

Derate at 4.6 mA/ $^\circ\text{C}$ above end cap temperature = 110°C . Derate axial types at 3.0 mA/ $^\circ\text{C}$ above ambient temperature = 25°C .

Note 2: Test pulse = 8.3ms, half sine wave.

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

Part number	Maximum forward voltage $V_F @ I_F$		Maximum DC reverse current I_R			
			$V_R=20\text{V}$	$V_R=V_{RWM}$	$V_R=20\text{V}$ $T_A=150^\circ\text{C}$	$V_R=V_{RWM}$ $T_A=150^\circ\text{C}$
	$V @ \text{mA}$		nA	μA	μA	μA
1N6638	0.8V @ 10mA	1.1V @ 200mA	25	0.5	40	100
1N6642	1.0V @ 10mA	1.2V @ 100mA	25	0.5	50	100
1N6643	1.0V @ 10mA	1.2V @ 100mA	50	0.5	75	160

Part number	Reverse recovery time t_{rr} Note 1	Maximum forward recovery voltage and time $I_F = 50\text{mA}$, $t_r = 1\text{ns}$		Maximum junction capacitance $f = 1\text{MHz}$ $V_{sig} = 50\text{mV (p-p)}$	
				$V_R=0\text{V}$	$V_R=1.5\text{V}$
	ns	V_{fr} V	t_{fr} ns	pF	pF
1N6638	4.5	5.0	20	2.0	1.4
1N6642	5.0	5.0	20	5.0	2.8
1N6643	6.0	5.0	20	5.0	2.8

Note 1: Reverse Recovery Time Test Conditions:

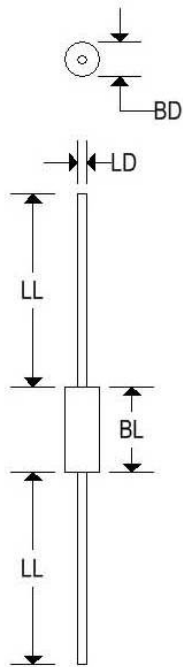
$I_F = I_R = 10\text{mA}$, $I_{R(REC)} = 1.0\text{mA}$, $C = 3\text{pF}$, $R_L = 100\text{ohms}$

1N6638, 1N6642-1N6643

SWITCHING RECTIFIERS

MECHANICAL CHARACTERISTICS

Case	DO-35
Marking	Body painted, alpha-numeric
Polarity	Cathode band



	DO-35			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	0.055	0.090	1.400	2.290
BL	0.120	0.200	3.050	5.080
LD	0.018	0.022	0.460	0.560
LL	1.000	1.500	25.400	38.100

1N6638, 1N6642-1N6643

SWITCHING RECTIFIERS

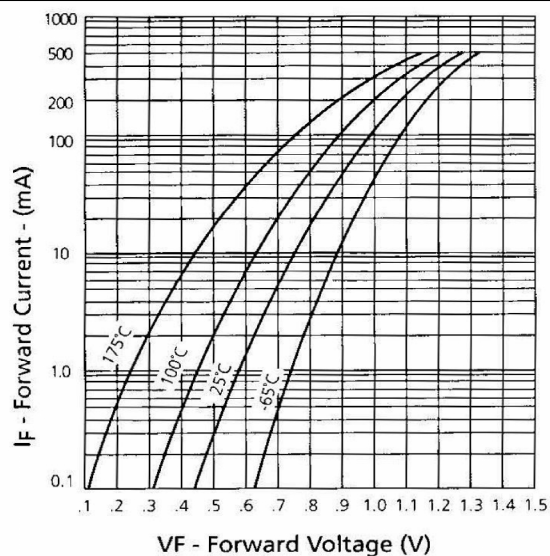


FIGURE 2
1N6638 & US
Typical Forward Current
vs Forward Voltage

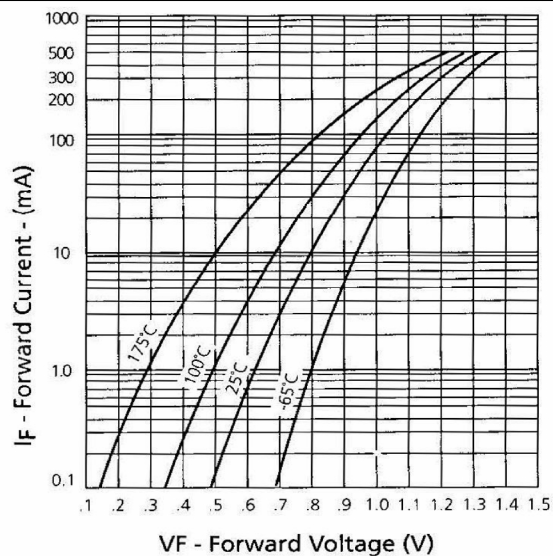


FIGURE 3
1N6642, 1N6643, & US
Typical Forward Current
vs Forward Voltage

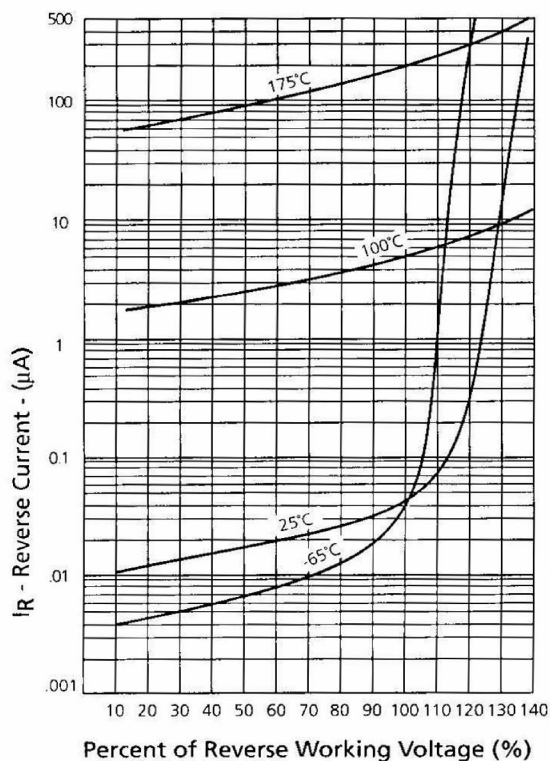


FIGURE 4
1N6638, 1N6642, & US
Typical Reverse Current
vs Reverse Voltage

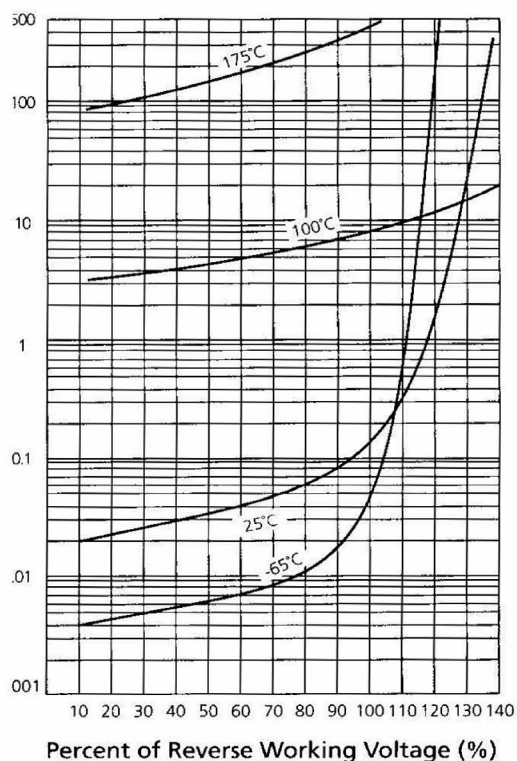


FIGURE 5
1N6643 & US
Typical Reverse Current
vs Reverse Voltage