DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

UES701(R)-UES703(R)

ULTRA FAST RECOVERY RECTIFIERS

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

Rating	Symbol	UES701(R)	UES702(R)	UES703(R)	Unit
Working peak reverse voltage	V_{RWM}	50	100	150	V
Repetitive peak reverse voltage	V_{RRM}	50	100	150	V
Maximum average DC output current @ T_C = 100°C	I_D	25			A
Non-repetitive sinusoidal surge current (8.3ms)	I_{FSM}	400			A
RMS forward current	$I_{F(RMS)}$	40			A
Thermal resistance, junction to case	$R_{\Theta JC}$	1.5			°C/W
Junction and storage temperature range	T_J, T_{stg}	-55 to +175			°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Part number	Maximum forward voltage @ I_F = 25A		Maximum reverse current @ V_{RWM}		Maximum reverse recovery time[1]
	V_F		I_R		t_{rr}
	T_C = 25°C	T_C = 125°C	T_C = 25°C	T_C = 125°C	
	Volts	Volts	µA	mA	ns
UES701(R)	0.95	0.825	20	4	35
UES702(R)	0.95	0.825	20	4	35
UES703(R)	0.95	0.825	20	4	35

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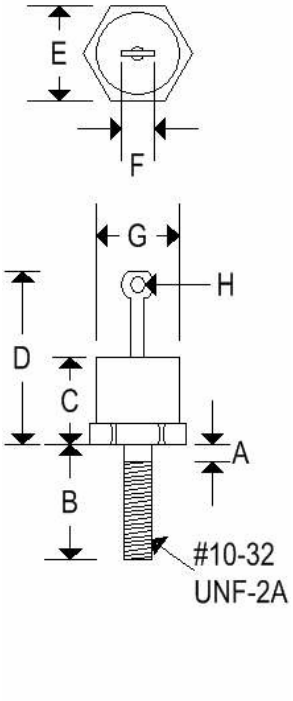
MECHANICAL CHARACTERISTICS

Case	DO-4(R)
Marking	Alpha numeric
Normal polarity	Cathode is stud
Reverse polarity	Anode is stud (add "R" suffix)



	DO-4(R)			
	Inches		Millimeters	
	Min	Max	Min	Max
A	-	0.078	-	1.981
B	0.422	0.453	10.719	11.506
C	-	0.405	-	10.287
D	-	0.800	-	20.320
E	0.420	0.440	10.668	11.176
F	-	0.250	-	6.350
G	-	0.424	-	10.770
H	0.066	-	1.676	-

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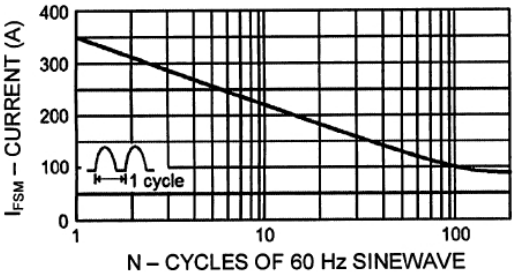

FIGURE 1
Maximum Forward Surge vs Number of Cycles

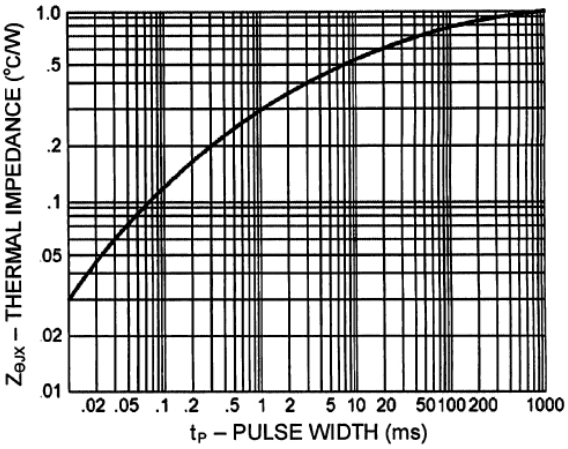

FIGURE 2
Thermal Impedance vs. Pulse Width

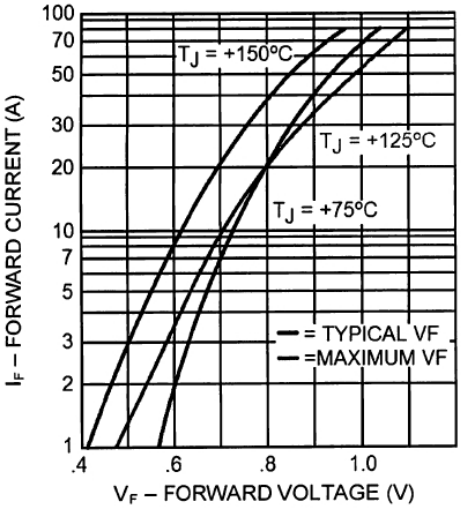

FIGURE 3
Forward Current vs. Forward Voltage

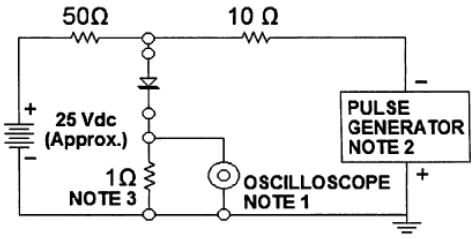

FIGURE 4
Reverse-Recovery Circuit

NOTES:
1. Oscilloscope: Rise time ≤ 3 ns; input impedance = 50 Ω.
2. Pulse Generator: Rise time ≤ 8 ns; source impedance 10 Ω.
3. Current viewing resistor, non-inductive, coaxial recommend.

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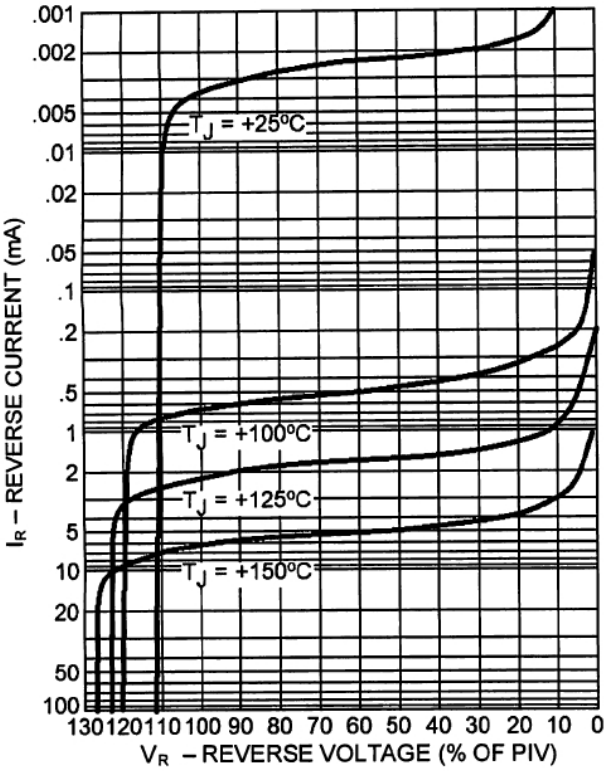

FIGURE 5
Typical Reverse Current vs. Reverse Voltage

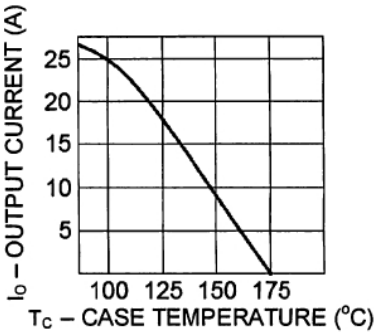

FIGURE 6
Output Current vs. Case Temperature