

DIGITRON SEMICONDUCTORS

UES701-UES703

ULTRA FAST RECOVERY RECTIFIERS

MAXIMUM RATINGS

Rating	Symbol	UES701	UES702	UES703	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 @ $T_c = 100^\circ\text{C}$	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			$^\circ\text{C/W}$
Junction and storage temperature range	T_J, T_{stg}	-55 to +175			$^\circ\text{C}$

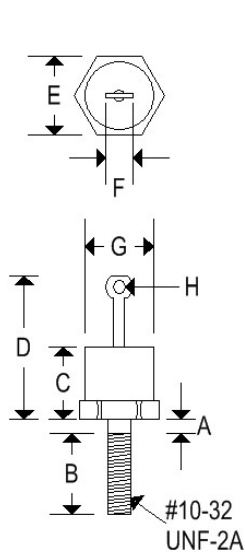
ELECTRICAL CHARACTERISTICS

Part number	Maximum forward voltage @ $I_F = 25\text{A}$		Maximum reverse current @ V_{RWM}		Maximum reverse recovery time ⁽¹⁾
	V_F		I_R		
	$T_c = 25^\circ\text{C}$	$T_c = 125^\circ\text{C}$	$T_c = 25^\circ\text{C}$	$T_c = 125^\circ\text{C}$	t_{rr}
	Volts	Volts	μA	mA	ns
UES701	0.95	0.825	20	4	35
UES702	0.95	0.825	20	4	35
UES703	0.95	0.825	20	4	35

Note 1: Measured in circuit $I_F = 0.5\text{A}$, $I_R = 1\text{A}$, $I_{REC} = 0.25\text{A}$.

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	-

Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).

Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.

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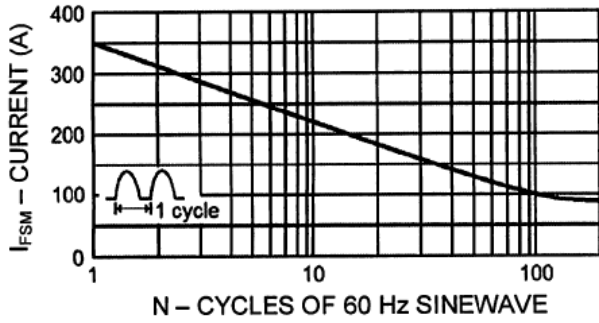


FIGURE 1

Maximum Forward Surge vs Number of Cycles

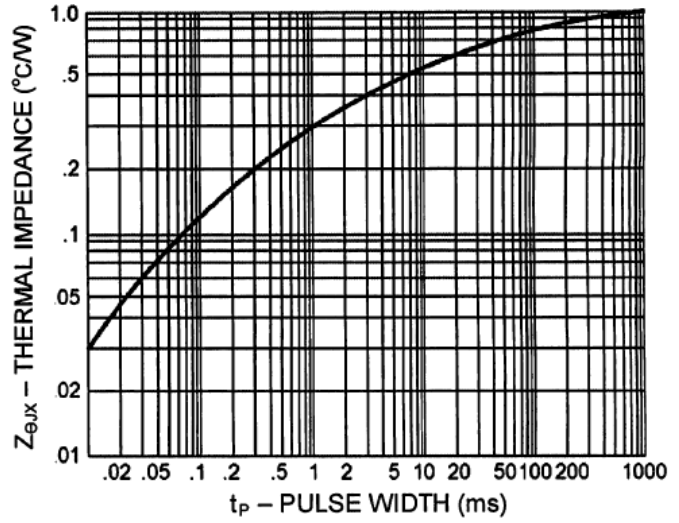


FIGURE 2

Thermal Impedance vs. Pulse Width

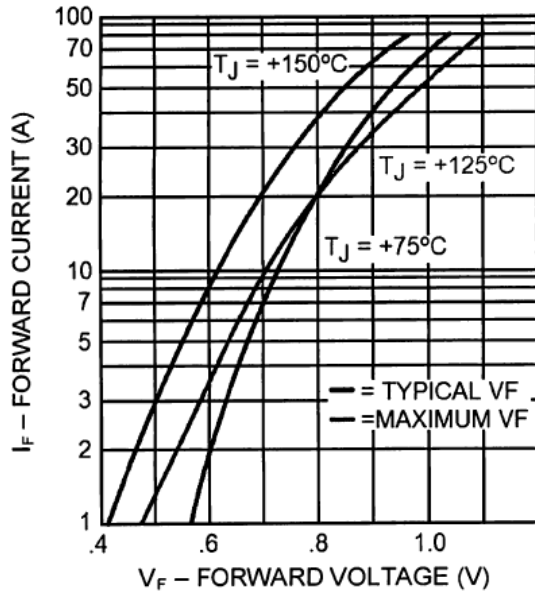


FIGURE 3

Forward Current vs. Forward Voltage

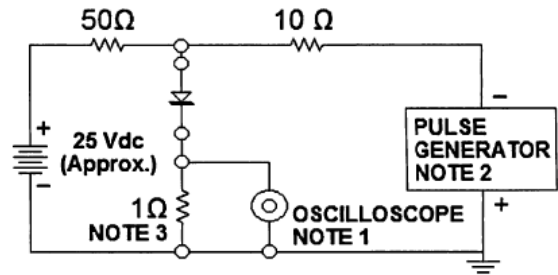


FIGURE 4

Reverse-Recovery Circuit

NOTES:

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

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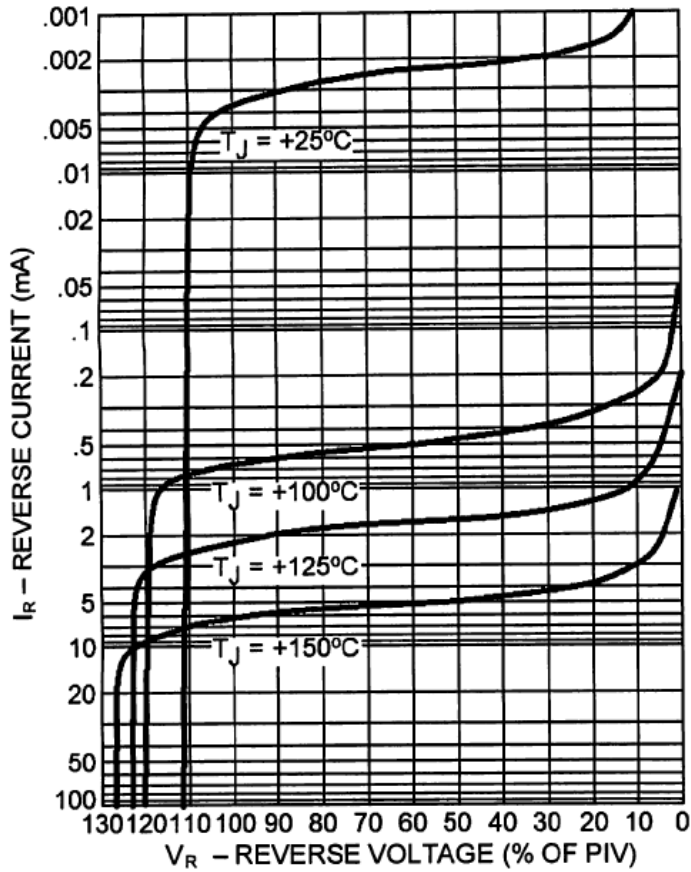


FIGURE 5
Typical Reverse Current vs. Reverse Voltage

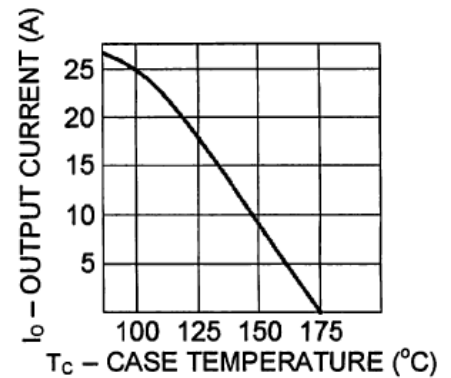


FIGURE 6
Output Current vs. Case Temperature