

# 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			$^\circ\text{C}$

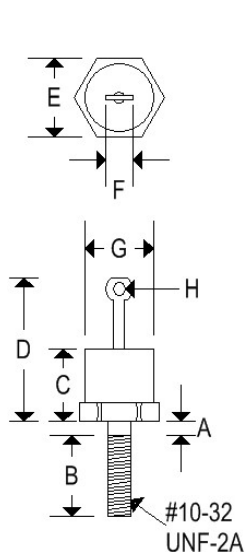
## ELECTRICAL CHARACTERISTICS

Part number	Maximum forward voltage @ $I_F = 25\text{A}$		Maximum reverse current @ $V_{RWM}$		Maximum reverse recovery time <sup>(1)</sup>
	$V_F$		$I_R$		
	$T_c = 25^\circ\text{C}$	$T_c = 125^\circ\text{C}$	$T_c = 25^\circ\text{C}$	$T_c = 125^\circ\text{C}$	$t_{rr}$
	Volts	Volts	$\mu\text{A}$	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.

144 Market Street  
Kenilworth NJ 07033 USA

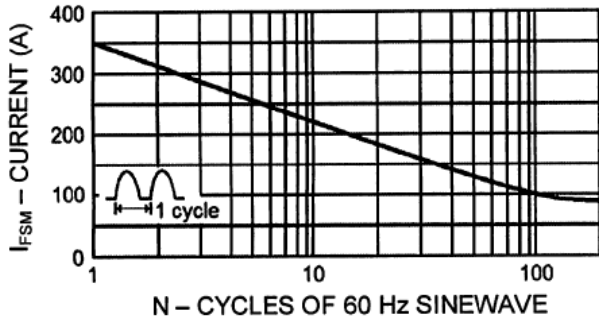
phone +1.908.245-7200  
fax +1.908.245-0555

sales@digitroncorp.com  
www.digitroncorp.com

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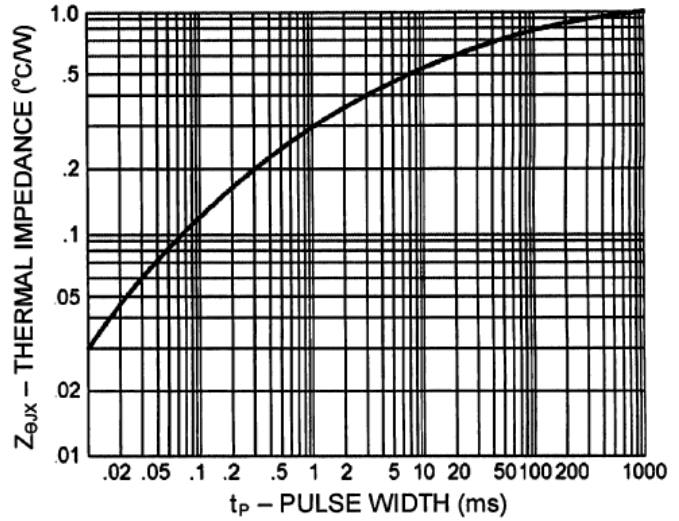
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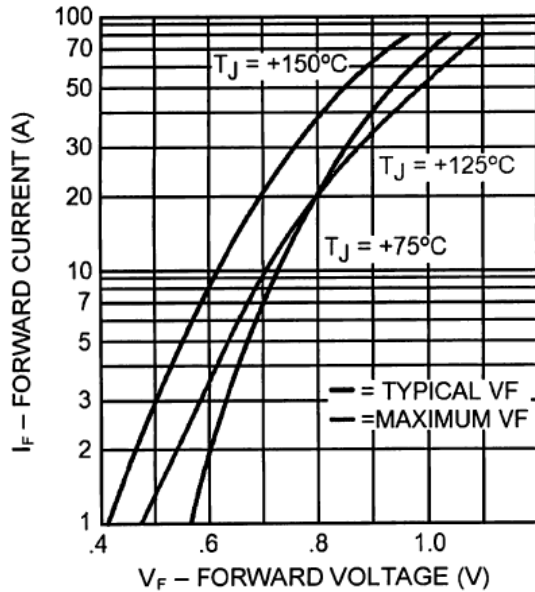
**FIGURE 1**

Maximum Forward Surge vs Number of Cycles



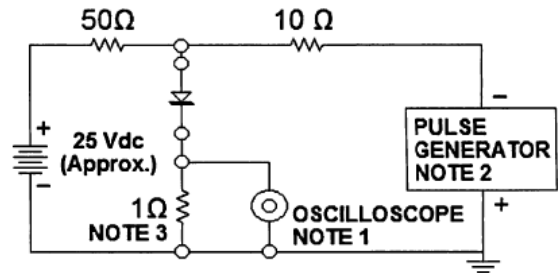
**FIGURE 2**

Thermal Impedance vs. Pulse Width



**FIGURE 3**

Forward Current vs. Forward Voltage



**FIGURE 4**

Reverse-Recovery Circuit

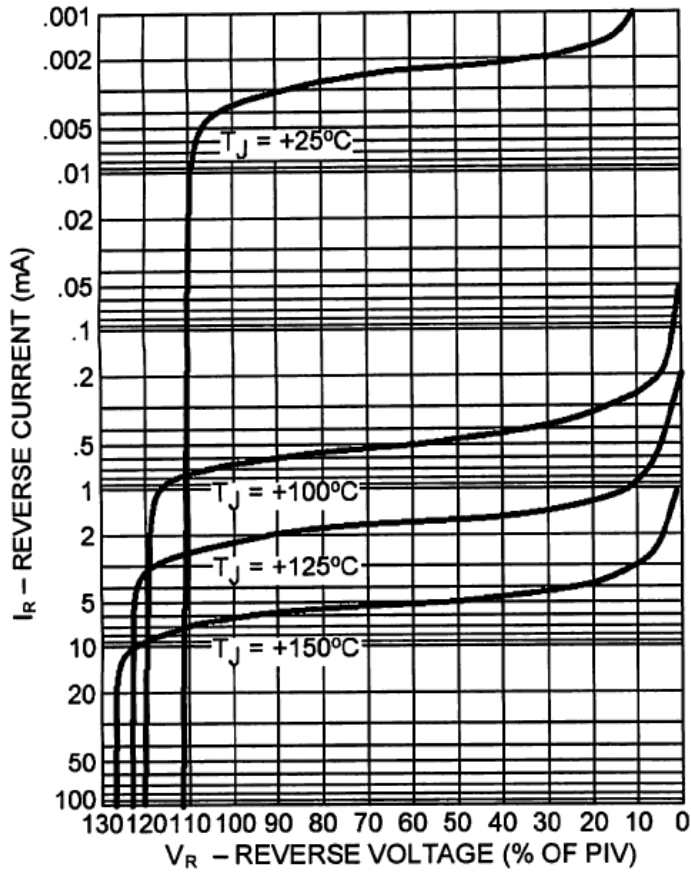
**NOTES:**

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

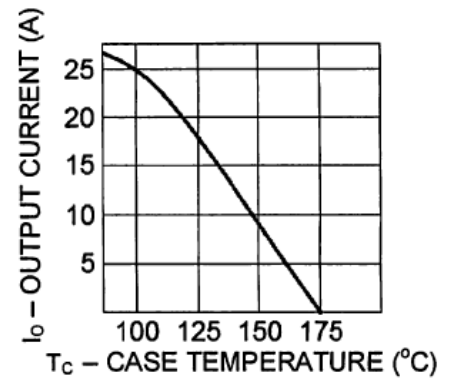
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**FIGURE 5**  
Typical Reverse Current vs. Reverse Voltage



**FIGURE 6**  
Output Current vs. Case Temperature