

D13T3-D13T4

PROGRAMMABLE UNIJUNCTION TRANSISTORS

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	Value	Unit
Power dissipation	P_F	300	mW
DC forward anode current	I_T	150	mA
DC gate current	I_G	± 20	mA
Repetitive peak forward current 100 μ s pulse width, 1.0% duty cycle 20 μ s pulse width, 1.0% duty cycle	I_{TRM}	1.0 2.0	Amp
Non-repetitive peak forward current 10 μ s pulse width	I_{TSM}	5.0	Amp
Gate to cathode forward voltage	V_{GKF}	100	Volts
Gate to cathode reverse voltage	V_{GKR}	-5.0	Volts
Gate to anode reverse voltage	V_{GAR}	100	Volts
Anode to cathode voltage ⁽¹⁾	V_{AK}	± 100	Volts
Operating junction temperature range	T_J	-50 to 100	°C
Storage temperature range	T_{stg}	-55 to 150	°C

Note 1: Anode positive: $R_{GA} = 1000\Omega$, Anode negative: $R_{GA} = \text{open}$

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

Characteristic		Symbol	Min	Typ	Max	Unit
Peak current ($V_S = 10\text{Vdc}$, $R_G = 1.0\text{M}\Omega$)	D13T3	I_P	-	-	2.0	μA
	D13T4		-	-	0.15	
($V_S = 10\text{Vdc}$, $R_G = 10\text{k}\Omega$)	D13T3		-	-	5.0	
	D13T4		-	-	1.0	
Off set voltage ($V_S = 10\text{Vdc}$, $R_G = 1.0\text{M}\Omega$)	D13T3	V_T	0.2	-	1.6	Volts
	D13T4		0.2	-	0.6	
($V_S = 10\text{Vdc}$, $R_G = 10\text{k}\Omega$)	(both)		0.2	-	0.6	
Valley current ($V_S = 10\text{Vdc}$, $R_G = 1.0\text{M}\Omega$)	D13T3	I_V	-	-	50	μA
	D13T4		-	-	25	
($V_S = 10\text{Vdc}$, $R_G = 10\text{k}\Omega$)	D13T3		70	-	-	mA
	D13T4		25	-	-	
($V_S = 10\text{Vdc}$, $R_G = 200\Omega$)	D13T3		1.5	-	-	
	D13T4		1.0	-	-	
Gate to anode leakage current ($V_S = 100\text{Vdc}$, $T_A = 25^\circ\text{C}$, cathode open) ($V_S = 100\text{Vdc}$, $T_A = 75^\circ\text{C}$, cathode open)		I_{GAO}	- -	- -	10 100	nA
Gate to cathode leakage current ($V_S = 100\text{Vdc}$, anode to cathode shorted)		I_{GKS}	-	-	100	nAdc

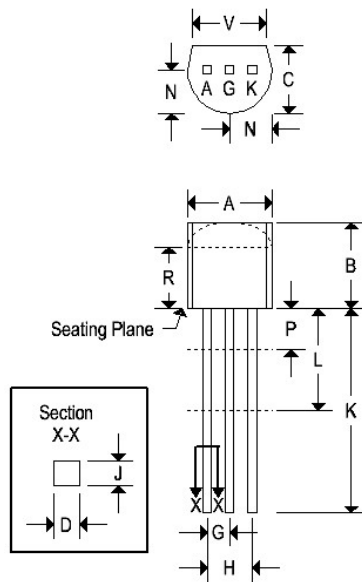
D13T3-D13T4

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Characteristic	Symbol	Min	Typ	Max	Unit
Forward voltage ($I_F = 50\text{mA}$ peak)	V_F	-	-	1.5	Volts
Peak output voltage	V_O	6.0	-	-	Volts
Pulse voltage rise time	t_r	-	-	80	ns

MECHANICAL CHARACTERISTICS

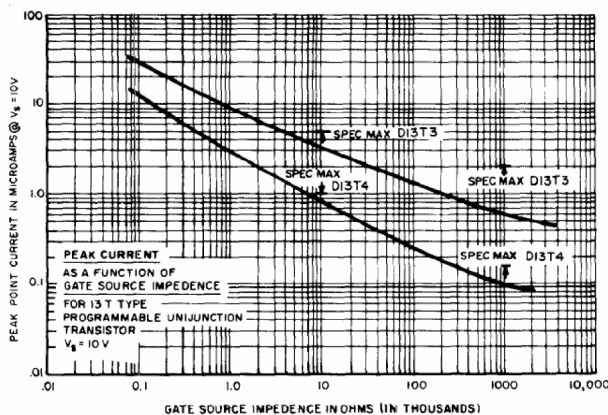
Case	TO-92
Marking	Alpha-numeric
Pin out	See below



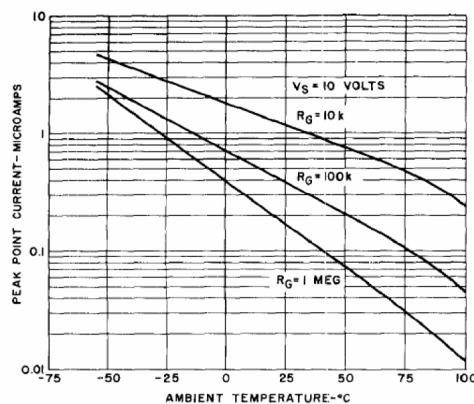
Di m	TO-92			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.175	0.205	4.450	5.200
B	0.170	0.210	4.320	5.330
C	0.125	0.165	3.180	4.190
D	0.016	0.021	0.407	0.533
G	0.045	0.055	1.150	1.390
H	0.095	0.105	2.420	2.660
J	0.015	0.020	0.390	0.500
K	0.500	-	12.70 0	-
L	0.250	-	6.350	-
N	0.080	0.105	2.040	2.660
P	-	0.100	-	2.540
R	0.115	-	2.930	-
V	0.135	-	3.430	-

D13T3-D13T4

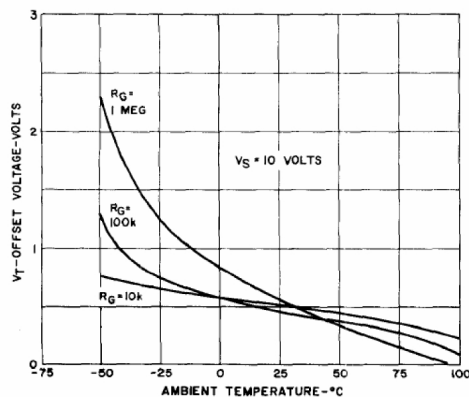
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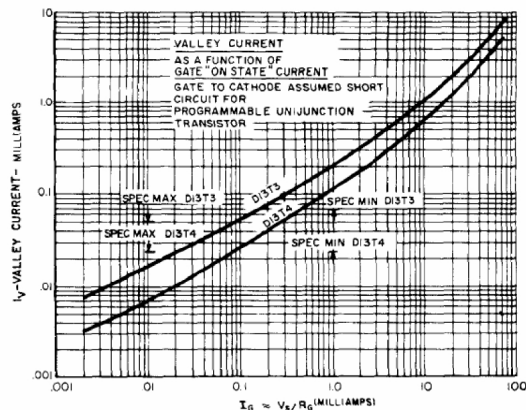
I_p vs Gate Source Impedance



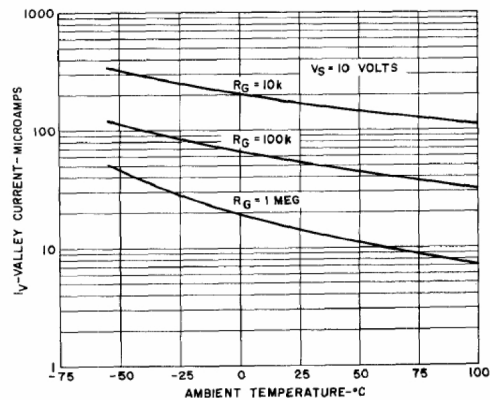
I_p vs Temperature and R_G



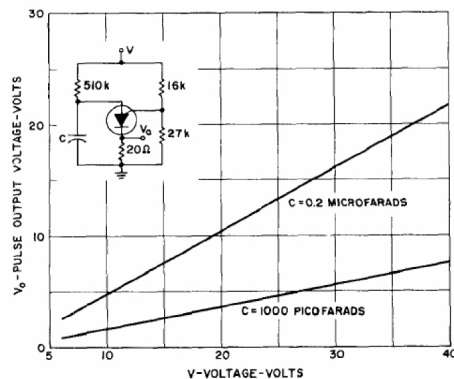
V_T vs Temperature and R_G



I_V vs Gate "on state" Current



I_V vs Temperature and R_G



Peak Output Voltage