

PUTs

Military, Planar, TO-18, Hermetic

2N6137

FEATURES

- Available as JAN and JANTX types per MIL standard 19500/493
- -55°C to +125°C Temperature Range for Timing and Oscillator Circuits
- $I_p \leq 10\mu A$ at $T = -55^\circ C$
 $I_v \geq 40\mu A$ at $T = +125^\circ C$
- Programmable η , R_{BB} , I_p and I_v
- Peak Recurrent Current: of 5A
- Low On-State Voltage Drop
- Hermetically Sealed Metal Case and Planar Passivated Construction for Maximum Reliability and Parameter Stability.

ABSOLUTE MAXIMUM RATINGS

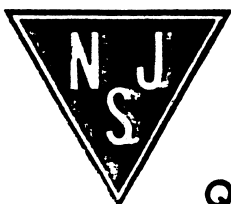
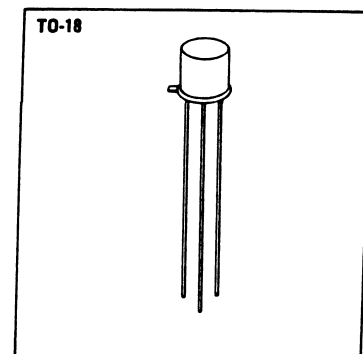
Anode-to-Cathode Forward Voltage, V_{AK}	40V
Anode-to-Cathode Reverse Voltage, V_{AKR}	40V
Gate-to-Cathode Forward Voltage, V_{GK}	40V
Gate-to-Anode Reverse Voltage, V_{GAR}	40V
Gate-to-Cathode Reverse Voltage, V_{GKR}	5V
Peak Recurrent Forward Current, 10 μ s 1% Duty Cycle	5A
Peak Gate Current, I_{GM}	250mA
Average Gate Current, $I_{G(AV)}$	50mA
Power Dissipation	
25°C Ambient	300mW
Derating Factor	2.4mW/°C
Storage Temperature Range	-55°C to +125°C
Operating Temperature Range	-55°C to +125°C

MECHANICAL SPECIFICATIONS

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	INCHES	MILLIMETERS
A	1.78-1.95 DIA.	4.52-4.95 DIA.
B	.170-.210	4.31-5.33
C	5 MIN.	12.70 MIN.
D	2.09-2.30 DIA.	5.31-5.84 DIA.
E	0.17 ± .002 DIA. 0.01 DIA.	4.32 ± .025 0.25
F	.020 MAX.	508 MAX.
G	1.00 ± 0.10 DIA.	2.54 ± .254 DIA.
H	0.41 ± 0.05	1.04 ± .127
J	.028-.048	711-1.22

GATE CONNECTED TO CASE

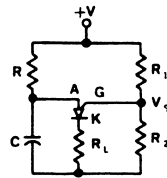


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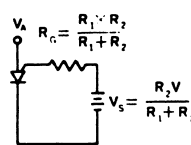
ELECTRICAL SPECIFICATIONS (at 25°C unless noted)†

Test	Symbol	Figure	Minimum	Typical	Maximum	Units	Test Conditions
SUBGROUP 1 Visual and Mechanical							
SUBGROUP 2							
Gate-anode blocking current	I_{GAO}	2	—	2	10	nA	$V_{GA} = \text{Rating}$
Gate-cathode blocking current	I_{GKS}	3	—	5	100	nA	$V_{GK} = \text{Rating}$
SUBGROUP 3							
Peak-point anode current	I_p	1	—	1 2.5	2 5	μA	$R_c = 1 \text{ Meg} / V_s = 10\text{V}$ $R_c = 10\text{K}$
Peak-point offset voltage	V_T	1	0.2 0.2	0.26 0.35	1.6 0.6	V	$R_c = 1 \text{ Meg} / V_s = 10\text{V}$ $R_c = 10\text{K}$
Valley-point anode current	I_v	1	— 70 1.5	15 200 2	50 — —	μA mA	$R_c = 1 \text{ Meg} / V_s = 10\text{V}$ $R_c = 10\text{K}$ $R_c = 200\Omega$
SUBGROUP 4							
Forward on-state voltage	V_F	4	—	0.85	1.0	V	$I_s = 50\text{mA}$
Peak pulse voltage	V_o	5	9	12	—	V	
Peak pulse voltage rise time	t_r	5	—	50	80	ns	
SUBGROUP 5							
Gate-anode blocking current (125°C Test)	I_{GAO}	2	—	150	500	nA	$V_{GA} = \text{Rating}$
Valley-point anode current (125°C Test)	I_v	1	40	100	—	μA	$R_c = 10\text{K}, V_s = 10\text{V}$
Peak-point anode current (–55°C Test)	I_p	1	—	7.5	10	μA	$R_c = 10\text{K}, V_s = 10\text{V}$

† All values in table are JEDEC registered



a) Typical Circuit



b) Equivalent Test Circuit

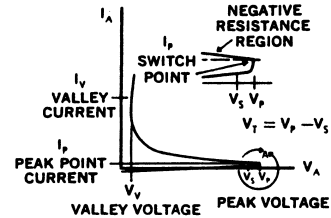


Figure 1

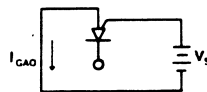


Figure 2

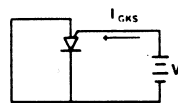


Figure 3

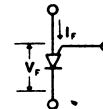


Figure 4

Note: Conditions for oscillation

$$\frac{V_{BB} - V_F}{R} > I_p$$

$$\frac{V_{BB} - V_V}{R} < I_v$$

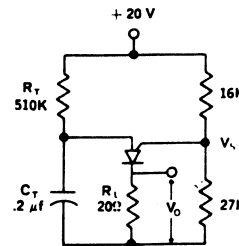


Figure 5

