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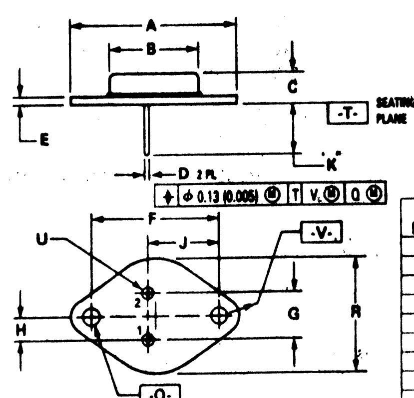
2N6338 thru 2N6341

25 AMPERE POWER TRANSISTORS NPN SILICON

100, 120, 140, 150 VOLTS 200 WATTS

*MAXIMUM RATINGS

Rating	Symbol	2N6338	2N6339	2N6340	2N6341	Unit
Collector-Base Voltage	V_{CB}	120	140	160	180	Vdc
Collector-Emitter Voltage	V_{CEO}	100	120	140	150	Vdc
Emitter-Base Voltage	V_{EB}	← 6.0 →				Vdc
Collector Current — Continuous Peak	I_C	← 25 → ← 50 →				Adc
Base Current	I_B	← 10 →				Adc
Total Device Dissipation @ $T_C = 25^{\circ}C$ Derate above $25^{\circ}C$	P_D	← 200 → ← 1.14 →				Watts $W/^{\circ}C$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	← -65 to +200 →				$^{\circ}C$



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	—	39.37	—	1.550
B	—	21.08	—	0.830
C	6.35	8.25	0.250	0.325
D	0.97	1.09	0.038	0.043
E	1.40	1.77	0.055	0.070
F	30.15 BSC		1.187 BSC	
G	10.92 BSC		0.430 BSC	
H	5.46 BSC		0.215 BSC	
J	16.89 BSC		0.665 BSC	
K	11.18	12.19	0.440	0.480
Q	3.84	4.19	0.151	0.165
R	—	26.67	—	1.050
U	4.83	5.33	0.190	0.210
V	3.84	4.19	0.151	0.165

*ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage (1) (I_C = 50 mAdc, I_B = 0) 2N6338	$V_{CEO(sus)}$	100	–	Vdc
2N6339		120	–	
2N6340		140	–	
2N6341		150	–	
Collector Cutoff Current (V_{CE} = 50 Vdc, I_B = 0) 2N6338	I_{CEO}	–	50	µAdc
(V_{CE} = 60 Vdc, I_B = 0) 2N6339		–	50	
(V_{CE} = 70 Vdc, I_B = 0) 2N6340		–	50	
(V_{CE} = 75 Vdc, I_B = 0) 2N6341		–	50	
Collector Cutoff Current (V_{CE} = Rated V_{CEO}, $V_{EB(off)}$ = 1.5 Vdc)	I_{CEX}	–	10	µAdc
(V_{CE} = Rated V_{CEO}, $V_{EB(off)}$ = 1.5 Vdc, T_C = 150°C)			1.0	mAdc
Collector Cutoff Current (V_{CB} = Rated V_{CB}, I_E = 0)	I_{CBO}	–	10	µAdc
Emitter Cutoff Current (V_{BE} = 6.0 Vdc, I_C = 0)	I_{EBO}	–	100	µAdc
ON CHARACTERISTICS (1)				
DC Current Gain (I_C = 0.5 Adc, V_{CE} = 2.0 Vdc)	h_{FE}	50		–
(I_C = 10 Adc, V_{CE} = 2.0 Vdc)		30	120	
(I_C = 25 Adc, V_{CE} = 2.0 Vdc)		12		
Collector-Emitter Saturation Voltage (I_C = 10 Adc, I_B = 1.0 Adc)	$V_{CE(sat)}$	–	1.0	Vdc
(I_C = 25 Adc, I_B = 2.5 Adc)		–	1.8	
Base-Emitter Saturation Voltage (I_C = 10 Adc, I_B = 1.0 Adc)	$V_{BE(sat)}$	–	1.8	Vdc
(I_C = 25 Adc, I_B = 2.5 Adc)		–	2.5	
Base-Emitter On Voltage (I_C = 10 Adc, V_{CE} = 2.0 Vdc)	$V_{BE(on)}$	–	1.8	Vdc
DYNAMIC CHARACTERISTICS				
Current-Gain—Bandwidth Product (2) (I_C = 1.0 Adc, V_{CE} = 10 Vdc, f_{test} = 10 MHz)	f_T	40	–	MHz
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 0.1 MHz)	C_{ob}	–	300	pF
SWITCHING CHARACTERISTICS				
Rise Time (V_{CC} ≈ 80 Vdc, I_C = 10 Adc, I_{B1} = 1.0 Adc, $V_{BE(off)}$ = 6.0 Vdc)	t_r	–	0.3	µs
Storage Time (V_{CC} ≈ 80 Vdc, I_C = 10 Adc, I_{B1} = I_{B2} = 1.0 Adc)	t_s	–	1.0	µs
Fall Time (V_{CC} ≈ 80 Vdc, I_C = 10 Adc, I_{B1} = I_{B2} = 1.0 Adc)	t_f	–	0.25	µs

*Indicates JEDEC Registered Data.

(1) Pulse Test: Pulse Width ≤ 300 µs, Duty Cycle ≤ 2.0%.

(2) $f_T = |h_{fe}| \cdot f_{test}$.