

96D 80694 D

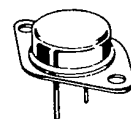
BU500

6 AMPERES

**NPN SILICON
POWER
METAL TRANSISTOR**

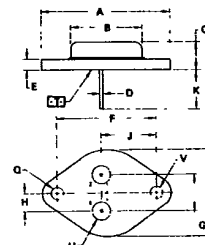
1500 VOLTS
75 WATTS

- $V_{CEX} = 1500 \text{ V};$
 $V_{CEO(sus)} = 700 \text{ V (min.)}$
- Low saturation:
 $V_{CE(sat)} = 1 \text{ V (max.)} @ I_c = 4.5 \text{ A dc}$



Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CE(sus)}$	700	Vdc
Collector-Base Voltage	V_{CBO}	1500	Vdc
Emitter-Base Voltage	V_{EBO}	5	Vdc
Collector-Emitter Voltage ($V_{BE} = -2.0$ V)	V_{CEX}	1500	Vdc
Collector-Current – continuous	I_C	6	A dc
– peak ($p_w \leq 300 \mu s$)	I_{CM}	16	Apk
Base-Current continuous	I_B	4	A dc
Total Power Dissipation @ $T_C = 25^\circ C$	P_D	75	Watts
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to 150	$^\circ C$

Characteristic	Symbol	Max.	Unit
Thermal Resistance, Junction to Case	θ_{JC}	1.66	$^{\circ}\text{C/W}$



NOTES

- 1 DIMENSIONS Q AND V ARE DATUMS
- 2 T IS SEATING PLANE AND DATUM
- 3 POSITIONAL TOLERANCE FOR MOUNTING HOLE Ø

FOR LEADS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	-	39.37	-	1.550
B	-	21.08	-	0.830
C	6.25	7.62	0.250	0.300
D	0.97	1.09	0.038	0.043
E	-	3.43	-	0.135
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
D	3.21	4.19	0.150	0.165
R	-	26.67	-	1.050
U	4.83	5.33	0.190	0.210
V	1.81	4.19	0.150	0.165

CASE 1-05 TO-3

A line graph showing the relationship between normalized power dissipation and case temperature for the 2N3638 tube. The y-axis is labeled $P_D/P_{D(MAX)}$, POWER DISSIPATION (NORMALIZED) and ranges from 0 to 1.0 in increments of 0.2. The x-axis is labeled T_C , CASE TEMPERATURE ($^{\circ}\text{C}$) and ranges from 0 to 200 in increments of 25. A solid line starts at (25, 1.0) and ends at (150, 0). The line passes through points (50, 0.8), (75, 0.6), (100, 0.4), and (125, 0.2).

T_C , CASE TEMPERATURE ($^{\circ}\text{C}$)	$P_D/P_{D(MAX)}$, POWER DISSIPATION (NORMALIZED)
25	1.0
50	0.8
75	0.6
100	0.4
125	0.2
150	0

6367254 MOTOROLA SC (XSTRS/R F)

96D 80695 D

T-33-13

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

Characteristic	Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS (1)				
Collector-Emitter Sustaining Voltage ($I_C = 500\text{ mAdc}$, $I_B = 0$, $L = 10\text{ mH}$)	$V_{CE(sus)}$	700		Vdc
Collector Cutoff Current at Reverse Bias: ($V_{CE} = 1000\text{ V}$, $I_E = 0$) ($V_{CE} = 1500\text{ V}$, $I_E = 0$)	I_{CBO}		0.02 1.0	mAdc
Collector-Emitter Cutoff Current ($V_{CE} = 1500\text{ V}$, $V_{BE} = -2\text{ V}$)	I_{CEX}		1.0	mAdc
Emitter-Base Reverse Voltage ($I_E = 100\text{ mA}$)	V_{EBO}	5		V
Emitter Cutoff Current ($V_{EB} = 4\text{ V}$)	I_{EBO}		10	mAdc

ON CHARACTERISTICS (1)

DC Current Gain ($I_C = 4.5\text{ Adc}$, $V_{CE} = 5\text{ V}$)	h_{FE}	3.0		—
Collector-Emitter Saturation Voltage ($I_C = 4.5\text{ Adc}$, $I_B = 2\text{ A}$)	$V_{CE(sat)}$		1.0	Vdc
Base-Emitter On Voltage ($I_C = 4.5\text{ Adc}$, $V_{CE} = 2\text{ A}$)	$V_{BE(on)}$		1.3	Vdc

SWITCHING CHARACTERISTICS (Resistive Load)

	(VCC = 100 Vdc, $I_C = 4.5\text{ A}$, $I_{B1} = 1.5\text{ A}$, $I_{B2} = 1.5\text{ A}$)		—		μs
Storage Time		t_s	—	1.2	
Fall Time		t_f	—	1.0	

(1) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2\%$