

96D 80694 D

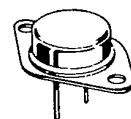
BU500

6 AMPERES

**NPN SILICON
POWER
METAL TRANSISTOR**

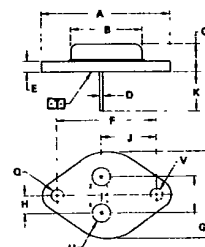
1500 VOLTS
75 WATTS

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



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

Characteristic	Symbol	Max.	Unit
Thermal Resistance, Junction to Case	θ_{JC}	1.66	°C/W



NOTES

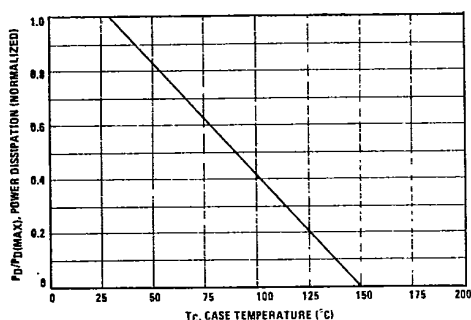
- 1 DIMENSIONS Q AND V ARE DATUMS
- 2 **T** IS SEATING PLANE AND DATUM
- 3 POSITIONAL TOLERANCE FOR MOUNTING HOLE Q

FOR LEADS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	-	39.37	-	1.550
B	-	21.08	-	0.830
C	6.35	7.62	0.250	0.300
D	0.97	1.09	0.038	0.043
E	-	3.43	-	0.135
F	10.15 BSC	-	1.187 BSC	-
G	20.92 BSC	-	0.430 BSC	-
H	5.45 BSC	-	0.215 BSC	-
J	16.83 BSC	-	0.665 BSC	-
K	11.18	12.19	0.440	0.480
L	3.21	4.19	0.150	0.165
M	-	26.67	-	1.050
U	4.83	5.33	0.190	0.210
V	1.81	6.19	0.150	0.185

CASE 1:05 TO-3

FIGURE 1 – POWER DERATING



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 $\leq 2\%$