

6367254 MOTOROLA SC (XSTRS/R F)

96D 80694 D

**MOTOROLA  
SEMICONDUCTOR  
TECHNICAL DATA**

T-33-13

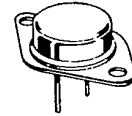
**BU500**

**HORIZONTAL DEFLECTION TRANSISTOR**

... specifically designed for use in large screen color deflection circuits

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

**6 AMPERES  
NPN SILICON  
POWER  
METAL TRANSISTOR  
1500 VOLTS  
75 WATTS**



**MAXIMUM RATINGS**

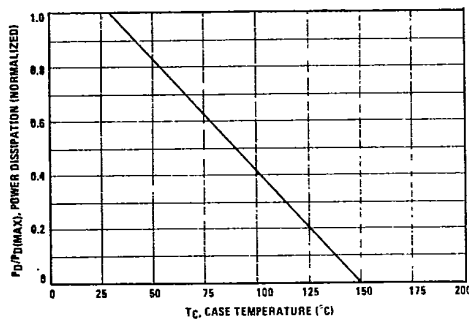
Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO(sus)}$	700	Vdc
Collector-Base Voltage	$V_{CB0}$	1500	Vdc
Emitter-Base Voltage	$V_{EBO}$	5	Vdc
Collector-Emitter Voltage ( $V_{BE} = -2.0\text{ V}$ )	$V_{CEX}$	1500	Vdc
Collector-Current — continuous	$I_C$	6	A dc
— peak ( $p_w \leq 300\ \mu s$ )	$I_{CM}$	16	A pk
Base-Current continuous	$I_B$	4	A dc
Total Power Dissipation @ $T_C = 25^\circ\text{C}$	$P_D$	75	Watts
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to 150	$^\circ\text{C}$

**THERMAL CHARACTERISTICS**

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



**FIGURE 1 — POWER DERATING**



- NOTES  
 1 DIMENSIONS D AND V ARE DATUMS  
 2  $\square$  IS SEATING PLANE AND DATUM  
 3 POSITIONAL TOLERANCE FOR MOUNTING HOLE D

$\phi \pm 0.13\text{ (0.005)} \text{ } \square \text{ } \square \text{ } \square \text{ } \square \text{ } \square$

FOR LEADS

$\phi \pm 0.13\text{ (0.005)} \text{ } \square \text{ } \square \text{ } \square \text{ } \square \text{ } \square$

4 DIMENSIONS AND TOLERANCES PER ANSI Y14.5, 1972

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	28.31	-	1.150	-
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	30.15 BSC	-	1.187 BSC	-
G	10.92 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	0.126	0.165
M	-	26.67	-	1.050
U	4.83	5.33	0.190	0.210
V	3.81	4.19	0.150	0.165

CASE 1-05 TO-3

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

Characteristic	Symbol	Min.	Max.	Unit
<b>OFF CHARACTERISTICS (1)</b>				
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)**

	( $V_{CC} = 100\text{ Vdc}$ , $I_C = 4.5\text{ A}$ , $I_{B1} = 1.5\text{ A}$ , $I_{B2} = 1.5\text{ A}$ )	—	—	$\mu\text{s}$
Storage Time			1.2	
Fall Time			1.0	

(1) Pulse Test: Pulse Width =  $300\ \mu\text{s}$ , Duty Cycle  $\leq 2\%$



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Datasheets for electronics components.