

MOTOROLA SC {XSTRS/R F}

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6367254 MOTOROLA SC (XSTRS/R F)

96D 80694 D

T-33-13

MOTOROLA SEMICONDUCTOR TECHNICAL DATA

BU500

HORIZONTAL DEFLECTION TRANSISTOR

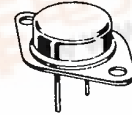
... specifically designed for use in large screen color deflection circuits

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

6 AMPERES

NPN SILICON
POWER
METAL TRANSISTOR

1500 VOLTS
75 WATTS



MAXIMUM RATINGS

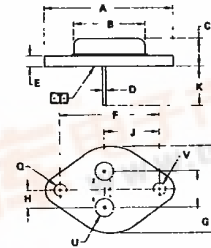
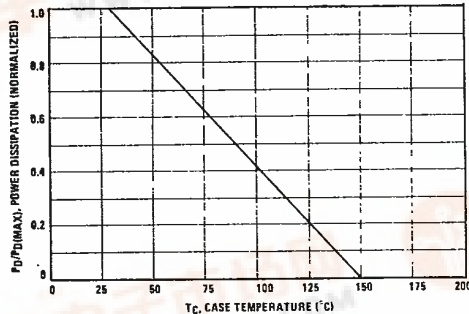
Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO(sus)}$	700	Vdc
Collector-Base Voltage	V_{CBO}	1500	Vdc
Emitter-Base Voltage	V_{EBO}	5	Vdc
Collector-Emitter Voltage ($V_{BE} = -2.0\text{ V}$)	V_{CEX}	1500	Vdc
Collector-Current — continuous	I_C	6	A _{dc}
— peak ($p_w \leq 300\ \mu\text{s}$)	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	θ_{JC}	1.66	$^\circ\text{C/W}$



FIGURE 1 — POWER DERATING



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

FOR LEADS
 $\phi \pm 0.13 (0.005) \text{ (T) } \text{V} \text{ (D)}$

4 DIMENSIONS AND TOLERANCES PER ANSI Y14.5, 1975

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	39.37	-	1.550	-
B	21.09	-	0.830	-
C	6.35	2.52	0.250	0.100
D	0.97	1.09	0.038	0.043
E	-	3.43	-	0.135
F	10.15 BSC	-	1.187 BSC	-
G	10.97 BSC	-	0.430 BSC	-
H	9.45 BSC	-	0.715 BSC	-
J	15.89 BSC	-	0.625 BSC	-
K	11.18	12.19	0.440	0.480
Q	3.21	4.19	0.150	0.165
R	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
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OFF CHARACTERISTICS (1)

Collector-Emitter Sustaining Voltage ($I_C = 500 \text{ mAdc}$, $I_E = 0$) $L = 10 \text{ mH}$	$V_{CE(sus)}$	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)

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



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