

6367254 MOTOROLA SC (XSTRS/R F)

96D 80596 D7-33-9

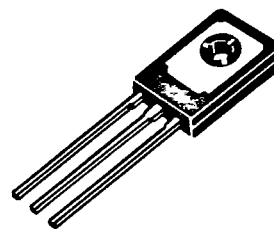
MOTOROLA SEMICONDUCTOR TECHNICAL DATA

**BD434, BD436
BD438, BD440
BD442**

PLASTIC MEDIUM POWER SILICON
PNP TRANSISTOR

4 AMPERE
POWER TRANSISTOR
PNP SILICON

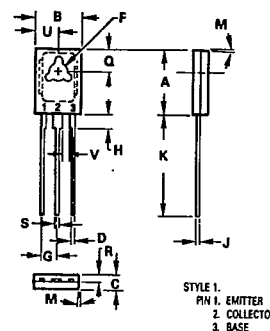
... for amplifier and switching applications Complementary
types: BD433/435/437/439/441.



MAXIMUM RATINGS

Rating	Symbol	Type	Value	Unit
Collector Emitter Voltage	V_{CEO}	BD434	22	Vdc
		BD436	32	
		BD438	45	
		BD440	60	
		BD442	80	
Collector Base Voltage	V_{CBO}	BD434	22	Vdc
		BD436	32	
		BD438	45	
		BD440	60	
		BD442	80	
Emitter Base Voltage	V_{EBO}		5	Vdc
Collector current	I_C		4	Adc
Base Current	I_B		1	Adc
Total Device Dissipation $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D		36	Watts mW/ $^\circ\text{C}$
			288	
Operating and Storage Junction Temperature range.	I_J, I_{stg}		-55 to +150	$^\circ\text{C}$

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NOTES:
1. MT = MAIN TERMINAL.
2. LEADS, TRUE POSITIONED WITHIN 0.25mm (0.010)
DIA TO DIM A & B AT MAXIMUM MATERIAL
CONDITION.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	10.80	11.04	0.425	0.435
B	7.50	7.74	0.295	0.305
C	2.42	2.66	0.095	0.105
D	0.51	0.66	0.020	0.026
F	2.83	3.17	0.115	0.125
G	2.32	2.46	0.091	0.097
H	1.27	2.41	0.050	0.095
J	0.38	0.63	0.015	0.025
K	14.61	16.53	0.575	0.655
M	2° TYP		2° TYP	
Q	3.76	4.01	0.148	0.158
R	1.15	1.39	0.045	0.055
S	0.64	0.88	0.025	0.035
U	3.69	3.93	0.145	0.155
V	1.01	—	0.040	—

CASE 77-05
TO-126

THERMAL CHARACTERISTICS

	Symbol	Max.	Unit
Thermal Resistance Junction to Case	θ_{JC}	3.5	$^\circ\text{C}/\text{W}$

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

Characteristics	Symbol	Min.	Typ.	Max.	Unit
Collector Emitter Breakdown Voltage (I _C = 100 mA, I _B = 0)	BD434 BD436 BD438 BD440 BD442	BV _{CEO}	22 32 45 60 80		Vdc
Collector Base Breakdown Voltage (I _C = 100 μA, I _B = 0)	BD434 BD436 BD438 BD440 BD442	BV _{CBO}	22 32 45 60 80		Vdc
Emitter Base Breakdown Voltage (I _E = 100 μA, I _C = 0)		BV _{EBO}	5		Vdc
Collector Cutoff Current (V _{CB} = 22 V, I _E = 0) (V _{CB} = 32 V, I _E = 0) (V _{CB} = 45 V, I _E = 0) (V _{CB} = 60 V, I _E = 0) (V _{CB} = 80 V, I _E = 0)	BD434 BD436 BD438 BD440 BD442	CBO		0.1 0.1 0.1 0.1 0.1	mAdc
Emitter Cutoff Current (V _{EB} = 5 V)		I _{EBO}		1	mAdc
DC Current Gain (I _C = 10 mA, V _{CE} = 5 V)	BD434 BD436 BD438 BD440 BD442	H _{FE}	40 40 30 20 15		
DC Current Gain (I _C = 500 mA, V _{CE} = 1 V)	BD434 BD436 BD438 BD440 BD442	H _{FE}	85 85 85 40 40	475 475 375 475 475	
DC Current Gain (I _C = 2 A, V _{CE} = 1 V)	BD434 BD436 BD438 BD440 BD442	H _{FE}	50 50 40 25 15		
Collector Saturation Voltage (I _C = 2 A, I _B = 0.2 A) (I _C = 3 A, I _B = 0.3 A)	BD434 BD436 BD438 BD440 BD442	V _{CE (sat)}		0.5 0.5 0.7 0.8 0.8	Vdc
Base - Emitter on voltage (I _C = 2 A, V _{CE} = 1 V)	BD434/436/438 BD440/442	V _{BE(ON)}		1.1 1.5	Vdc
Current Gain Bandwidth Product (V _{CE} = 1 V, I _C = 250 mA, f = 1 MHz)		f _T	3		MHz



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FIGURE 1 - COLLECTOR SATURATION REGION

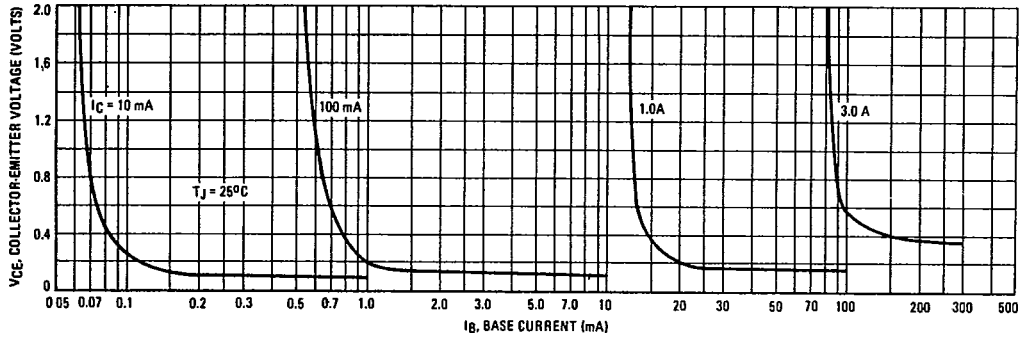


FIGURE 2 - CURRENT GAIN

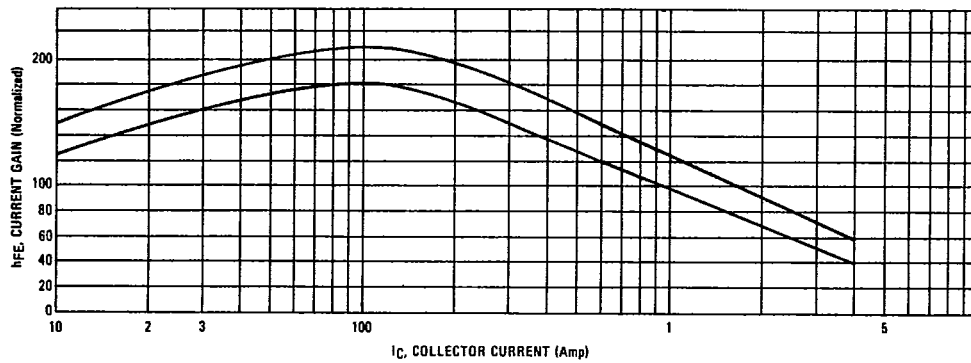


FIGURE 3 - "ON" VOLTAGE

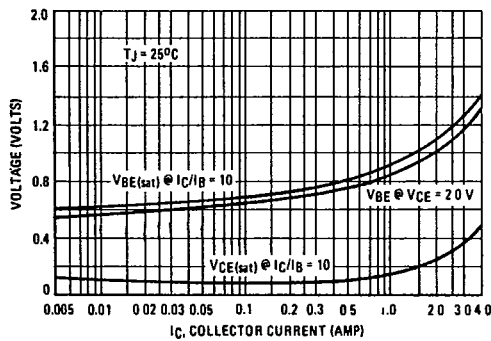
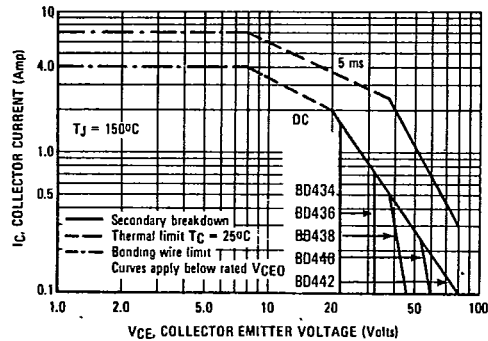


FIGURE 4 - ACTIVE REGION SAFE OPERATING AREA



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