

GENERAL DESCRIPTION SCA 3235 THROUGH 3240 ARE SILICON NPN TRANSISTORS WITH IMPROVED PERFORMANCE FOR SOCKET-TO-SOCKET REPLACEMENTS OF THE 40235 THROUGH 40240 SERIES OF DEVICES. THEY ARE INTENDED FOR UTILIZATION IN "FRONT END" AND IF/RF APPLICATIONS. THE DEVICES ARE AVAILABLE IN TO-72 PACKAGES PROVIDING ISOLATION OF ALL ELEMENTS SO THAT THE CASE MAY BE GROUNDED TO MINIMIZE CAPACITANCE AND COUPLING FROM OTHER CIRCUIT ELEMENTS.

SCA 3235 to SCA 3240
(40235 to 40240)
NPN RF/IF
AMPLIFIERS

ABSOLUTE MAXIMUM RATINGS

MAXIMUM TEMPERATURES

Storage Temperature -65°C to +200°C
 Operating Junction Temperature +200°C Maximum
 Lead Temperature (Soldering, No Time Limit) +265°C Maximum

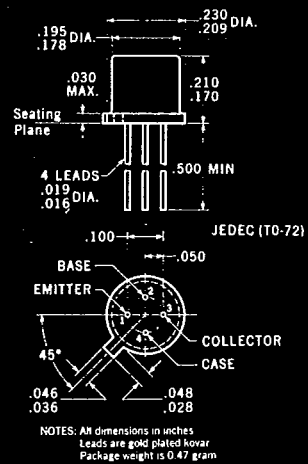
MAXIMUM POWER DISSIPATION

Total Dissipation at 25°C Case Temperature (Note 3) 0.3 Watt
 at 25°C Ambient Temperature (Note 3) 0.2 Watt

MAXIMUM VOLTAGES AND CURRENT

V_{CBO} Collector to Base Voltage 45 Volts
 V_{CBV} Collector to Base Voltage (V_{EB} = 1 V) 45 Volts
 V_{EBC} Emitter to Base Voltage 4.5 Volts
 I_C Collector Current 50 mA

PHYSICAL DIMENSIONS



ELECTRICAL CHARACTERISTICS (25°C Free Air Temperatures unless otherwise noted)

SYMBOL	CHARACTERISTIC	SCA3235 • SCA3240			UNITS	TEST CONDITION
		DEVICE	MIN.	TYP.		
V _{CBO}	Collector-Base Breakdown	A11	45			V I _C = 500 uA
V _{CBV}	Collector-Base Voltage	A11	45			V I _C = 1 mA, V _{BE} = 1 V
I _{EBO}	Emitter Cutoff Current	A11		1		uA V _{EB} = 4.5 V
I _{CBO}	Collector Cutoff Current	A11		.02		uA V _{CB} = 1 V
I _{CBO}	Collector Cutoff Current	A11		1		uA V _{CB} = 35 V
H _{FE}	D.C. Current Gain	3235,3238	40		170	V _{CE} = 6 V, I _C = 1 mA
H _{FE}	D.C. Current Gain	3236	40		275	V _{CE} = 6 V, I _C = 1 mA
H _{FE}	D.C. Current Gain	3237,3240	27		275	V _{CE} = 6 V, I _C = 1 mA
H _{FE}	D.C. Current Gain	3239	27		100	V _{CE} = 6 V, I _C = 1 mA
f _t	Current Gain Bandwidth Product	3235,3236,3237		1000		MHz V _{CE} = 6 V, I _C = 2 mA (Note 1)
f _t	Current Gain Bandwidth Product	3238,3239,3240		800		MHz V _{CE} = 6 V, I _C = 2 mA (Note 1)
C _{cb}	Collector-Base Feedback Capacitance	All but 3237		.5	.65	pF f = 216 MHz, V _{CE} = 12 V, I _E = 2 mA (Note 2)
C _{cb}	Collector-Base Feedback Capacitance	3237		.75	.9	pF f = 216 MHz, V _{CE} = 12 V, I _E = 1.5 mA (Note 2)
R _i	Input Resistance	3235,3236		200		ohms f = 216 MHz, V _{CE} = 10 V, I _E = 2 mA
R _i	Input Resistance	3238,3239,3240		480		ohms f = 45 MHz, V _{CE} = 12 V, I _E = 3 mA
R _o	Output Resistance	3238,3239,3240		35		KΩ f = 45 MHz, V _{CE} = 12 V, I _E = 3 mA
MAG	Maximum Available Amplifier Gain	3235		29.1		dB f = 216 MHz, V _{CE} = 10 V, I _E = 2 mA
MAG	Maximum Available Amplifier Gain	3238,3239,3240		45.3		dB f = 45 MHz, V _{CE} = 12 V, I _E = 3 mA

NOTES:

- (1) Lead No. 4 (case) grounded
- (2) Three-terminal measurement of the collector-to-base capacitance with the case and emitter leads connected to the guard terminal.
- (3) These ratings give a maximum junction temperature of 200°C and junction-to-case thermal resistance of 584°C/Watt (derating factor of 1.71 mW/°C). Junction-to-ambient thermal resistance of 875°C/Watt (derating factor of 1.14 mW/°C).



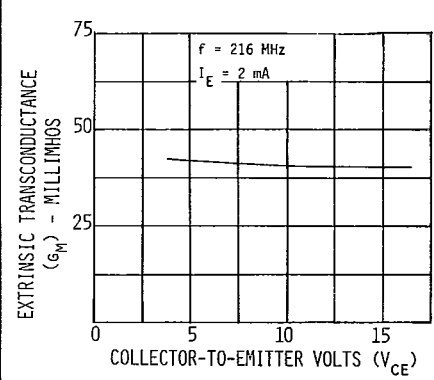
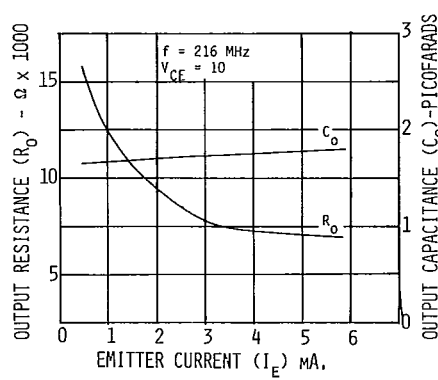
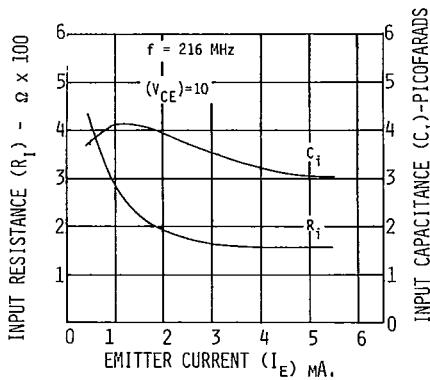
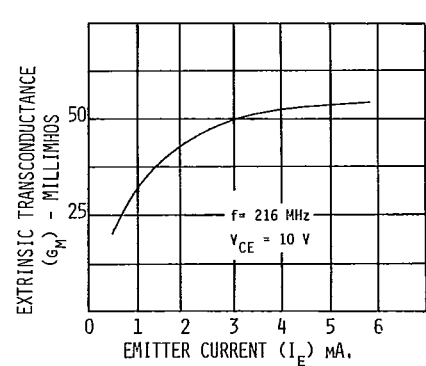
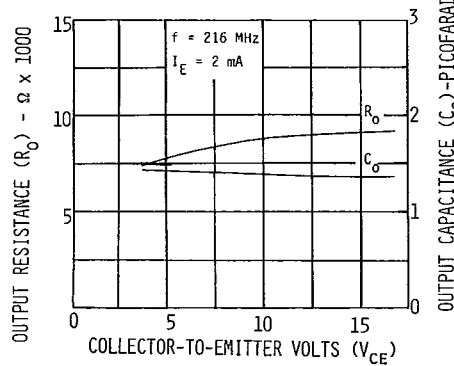
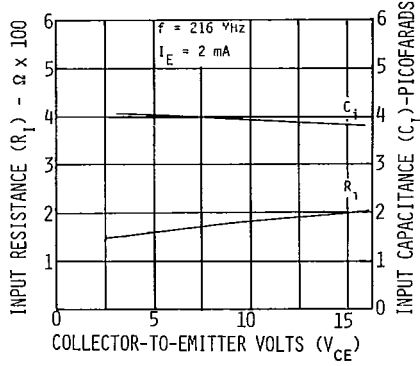
SEMICOA

TYPICAL INPUT CHARACTERISTICS

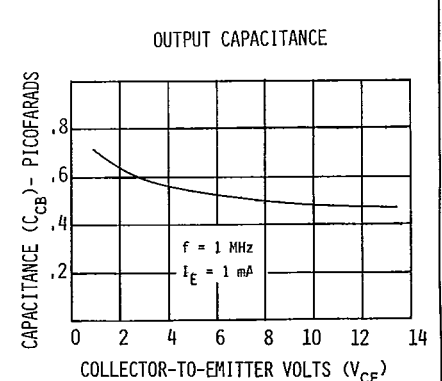
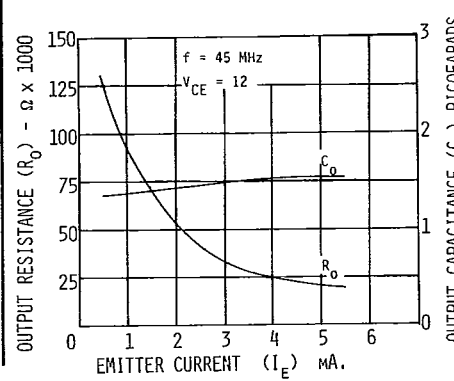
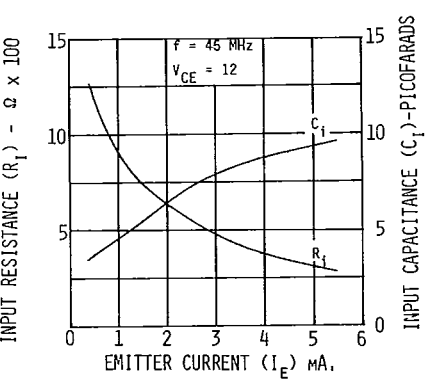
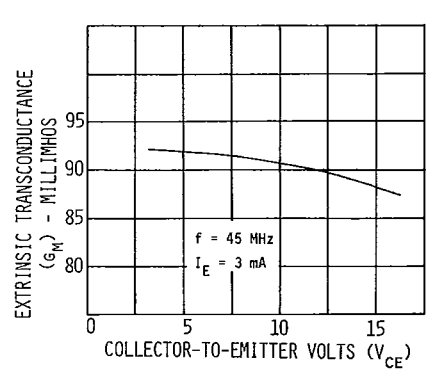
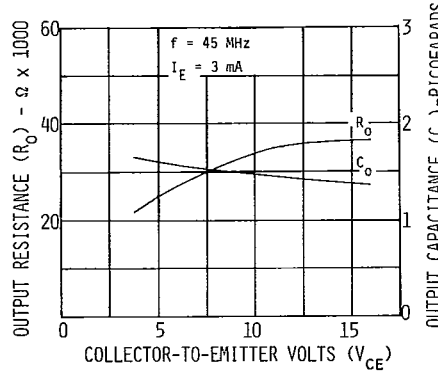
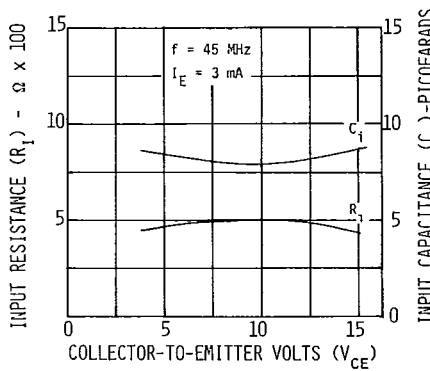
TYPICAL OUTPUT CHARACTERISTICS

TYPICAL TRANSCONDUCTANCE

SCA 3235



SCA 3238, SCA 3239, SCA 3240



SCA-3235-2X