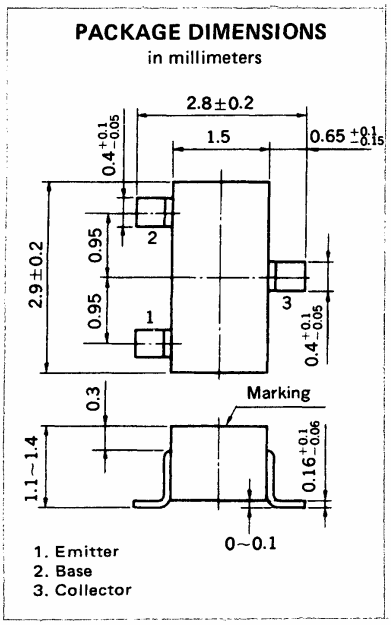
RENESAS

SILICON TRANSISTOR
2SC3360

HIGH VOLTAGE AMPLIFIER AND SWITCHING
NPN SILICON EPITAXIAL TRANSISTOR
MINI MOLD

PACKAGE DIMENSIONS
in millimeters



FEATURES

- High Voltage V_{CEO} = 200 V
- High DC Current Gain h_{FE} = 90 to 450
- Complementary to 2SA1330

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C)

Collector to Base Voltage	V_{CBO}	200	V
Collector to Emitter Voltage	V_{CEO}	200	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	100	mA
Total Power Dissipation	P_T	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	−55 to +150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			100	nA	V_{CB} = 200 V, I_E = 0
Emitter Cutoff Current	I_{EBO}			100	nA	V_{EB} = 5.0 V, I_C = 0
DC Current Gain	h_{FE1}*	90	200	450		V_{CE} = 10 V, I_C = 10 mA
DC Current Gain	h_{FE2}*	50	200			V_{CE} = 10 V, I_C = 50 mA
Base to Emitter Voltage	V_{BE} *	0.6	0.64	0.7	V	V_{CE} = 10 V, I_C = 10 mA
Collector Saturation Voltage	$V_{CE(sat)}$ *		0.1	0.3	V	I_C = 50 mA, I_B = 5 mA
Base Saturation Voltage	$V_{BE(sat)}$ *		0.8	1.2	V	I_C = 50 mA, I_B = 5 mA
Output Capacitance	C_{ob}		2.8		pF	V_{CB} = 30 V, I_E = 0, f = 1.0 MHz
Gain Bandwidth Product	f_T		160		MHz	V_{CE} = 10 V, I_E = −10 mA
Turn-on Time	t_{on}		0.15		μs	I_C = 10 mA, I_{B1} = −I_{B2} = 1 mA
<R> Turn-off Time	t_{off}		1.6		μs	V_{CC} = 10 V

* Pulsed: PW ≦ 350 μs, Duty Cycle ≦ 2 %

h_{FE} Classification

Marking	N15	N16	N17
h_{FE1}	90 to 180	135 to 270	200 to 450

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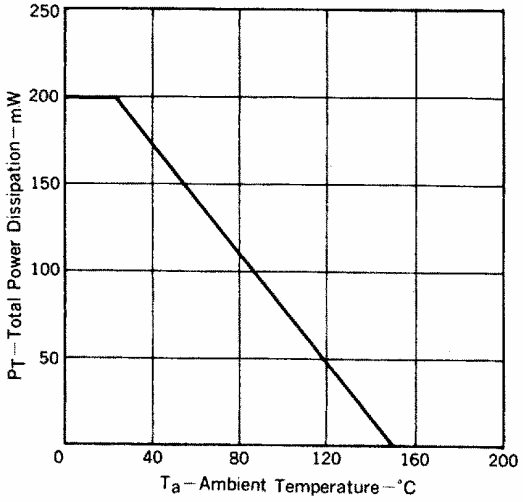
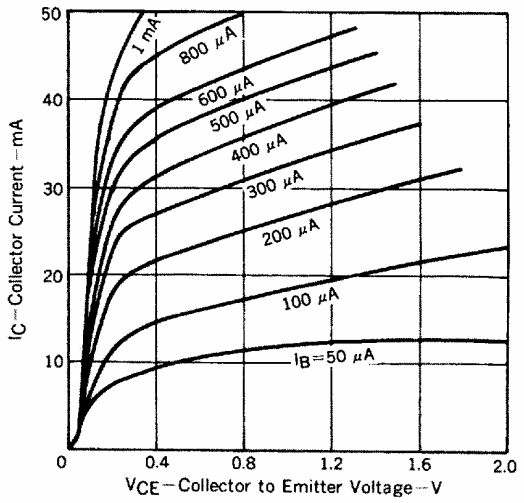
The mark <R> shows major revised points.
The revised points can be easily searched by copying an "<R>" in the PDF file and specifying it in the "Find what:" field.

TYPICAL CHARACTERISTICS (T_a = 25°C)

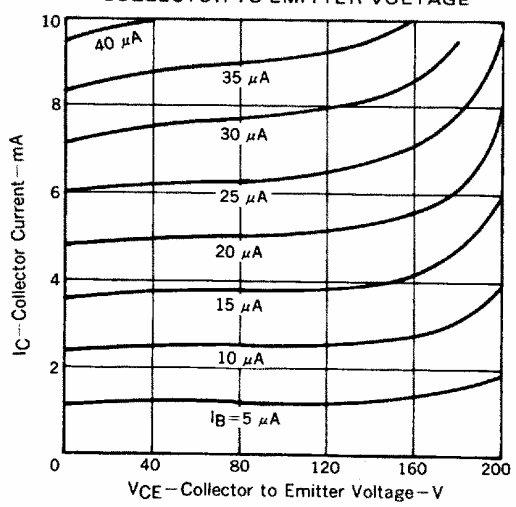
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



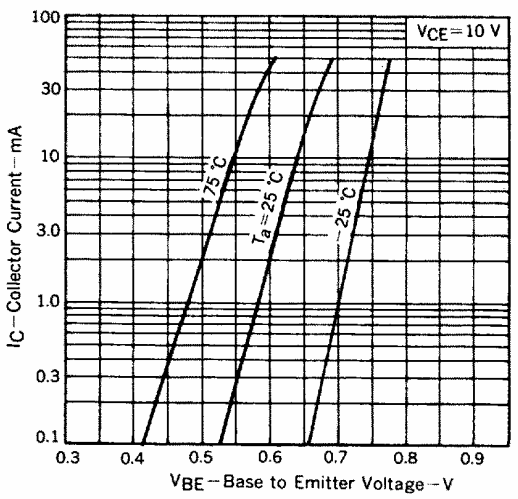
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



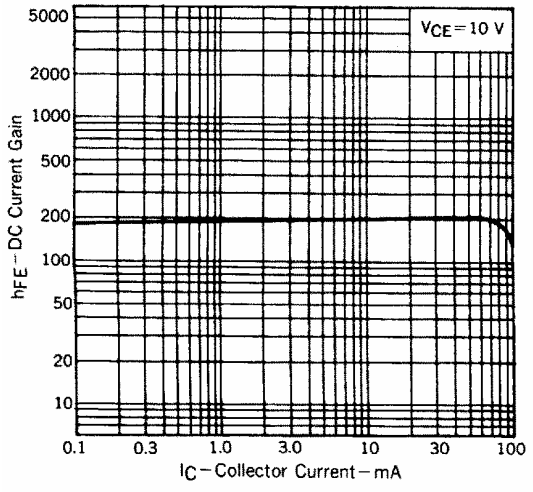
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



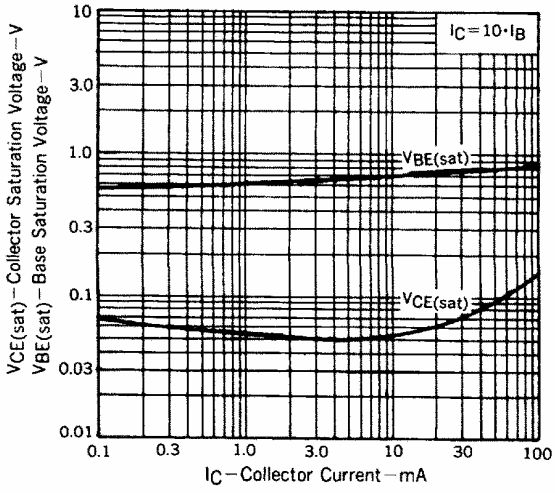
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



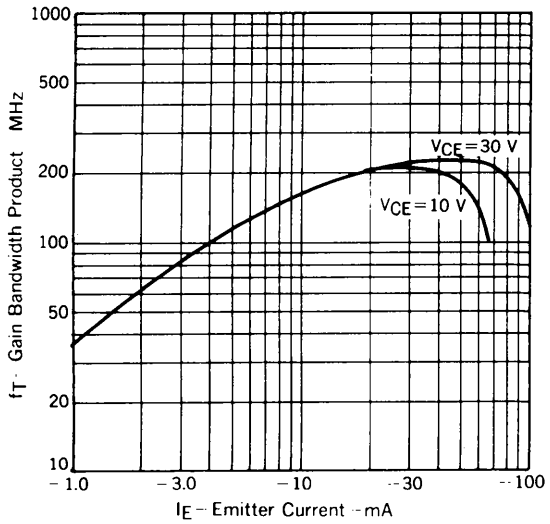
DC CURRENT GAIN vs. COLLECTOR CURRENT



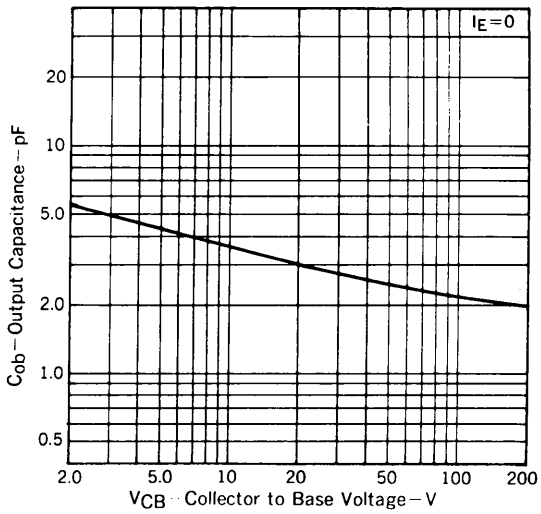
BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



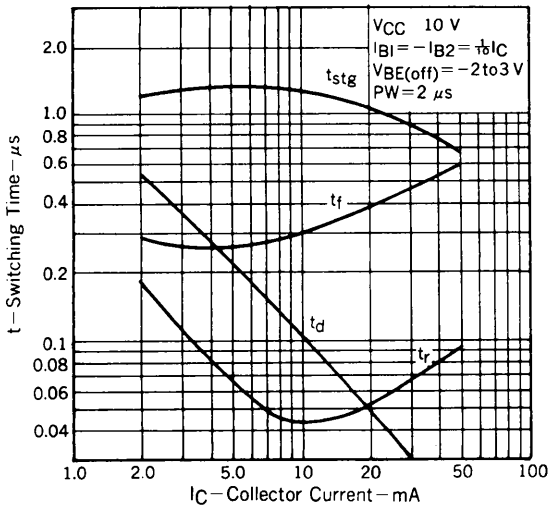
GAIN BANDWIDTH PRODUCT vs.
EMITTER CURRENT



OUTPUT CAPACITANCE vs.
COLLECTOR TO BASE VOLTAGE



SWITCHING TIME vs.
COLLECTOR CURRENT



<R>

$t_{on} = t_d + t_r$
$t_{off} = t_{stg} + t_f$

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