DATA SHEET

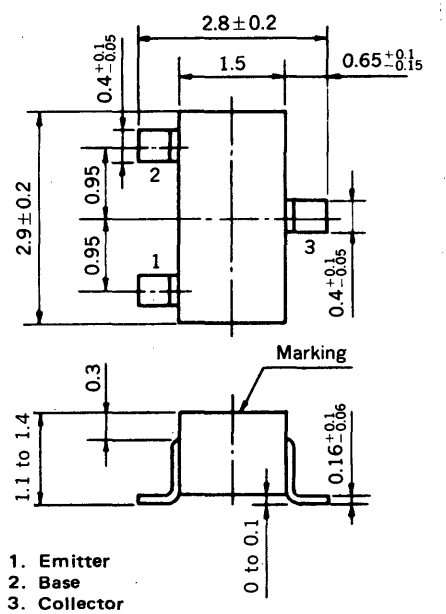
NEC
ELECTRON DEVICE

SILICON TRANSISTOR

FA1L4Z

MEDIUM SPEED SWITCHING
RESISTOR BUILT-IN TYPE NPN TRANSISTOR
MINI MOLD

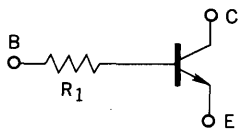
PACKAGE DIMENSIONS
in millimeters



1. Emitter
2. Base
3. Collector

FEATURES

- Resistor Built-in TYPE



R_1 = 47 kΩ

- Complementary to FN1L4Z

ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Currents (T_a = 25 °C)

Collector to Base Voltage	V_{CBO}	60	V
Collector to Emitter Voltage	V_{CEO}	50	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	100	mA
Collector Current (Pulse)	I_C	200	mA
Maximum Power Dissipation			
Total Power Dissipation at 25 °C Ambient Temperature	P_T	200	mW
Maximum Temperatures			
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} = 50 V, I_E = 0
DC Current Gain	h_{FE1}*	135	270	600		V_{CE} = 5.0 V, I_C = 5.0 mA
DC Current Gain	h_{FE2}*	100	260			V_{CE} = 5.0 V, I_C = 50 mA
Collector Saturation Voltage	$V_{CE(sat)}$*		0.05	0.2	V	I_C = 5.0 mA, I_B = 0.25 mA
Low-Level Input Voltage	V_{IL}*		0.57	0.5	V	V_{CE} = 5.0 V, I_C = 100 μA
High-Level Input Voltage	V_{IH}*	4.0	1.7		V	V_{CE} = 0.2 V, I_C = 5.0 mA
Input Resistor	R_1	32.9	47.0	61.1	kΩ	
Turn-on Time	t_{on}			0.2	μs	V_{CC} = 5 V, V_{in} = 5 V
Storage Time	t_{stg}			5.0	μs	R_L = 1 kΩ
Turn-off Time	t_{off}			6.0	μs	PW = 2 μs, Duty Cycle ≦ 2 %

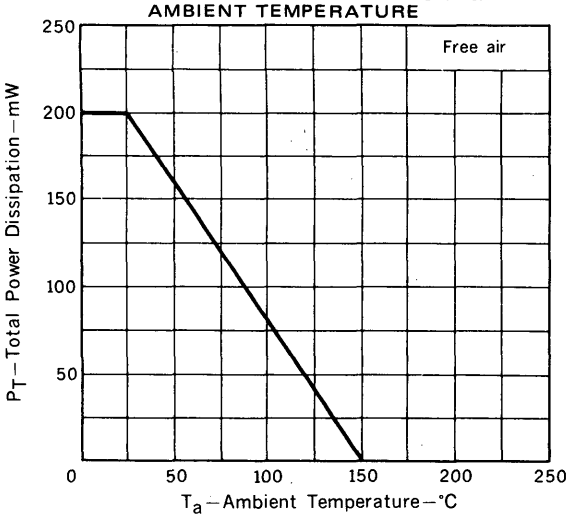
* Pulsed: PW ≦ 350 μs, Duty Cycle ≦ 2 %

h_{FE} Classification

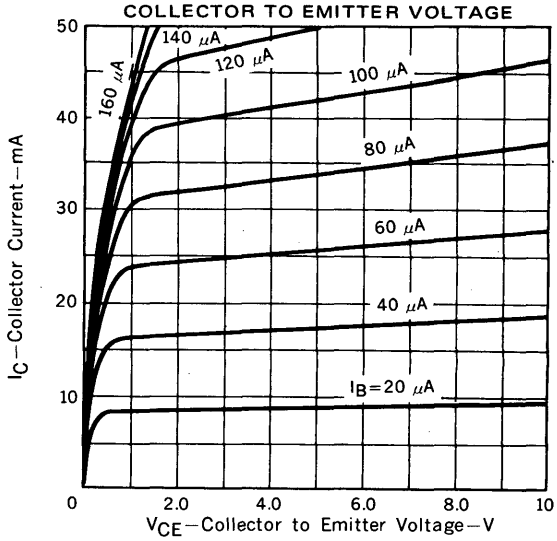
Marking	L61	L62	L63
h_{FE1}	135 to 270	200 to 400	300 to 600

TYPICAL CHARACTERISTICS (T_a = 25 °C)

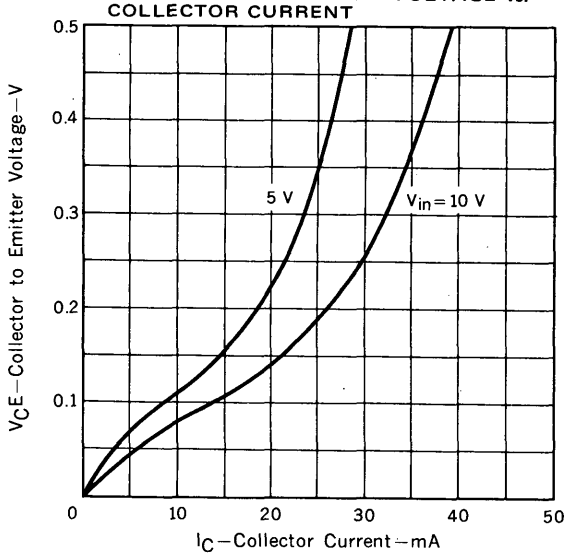
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



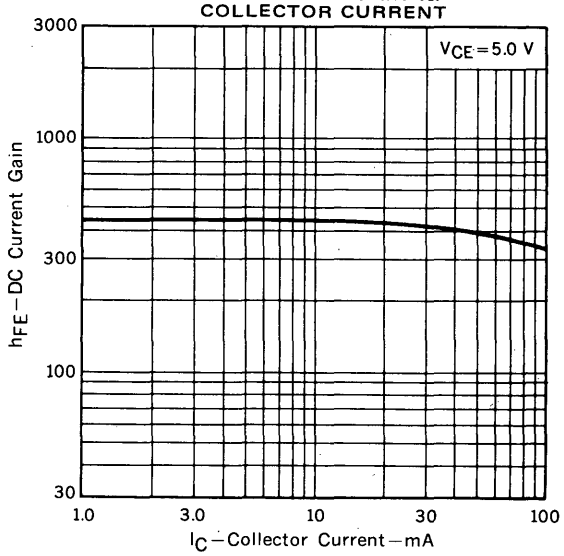
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



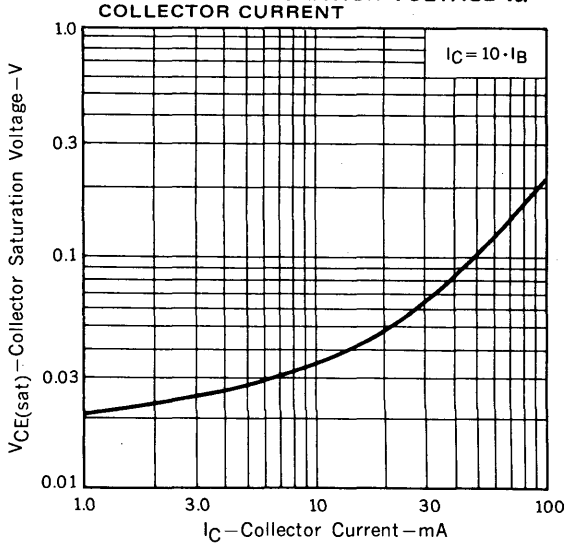
COLLECTOR TO EMITTER VOLTAGE vs. COLLECTOR CURRENT



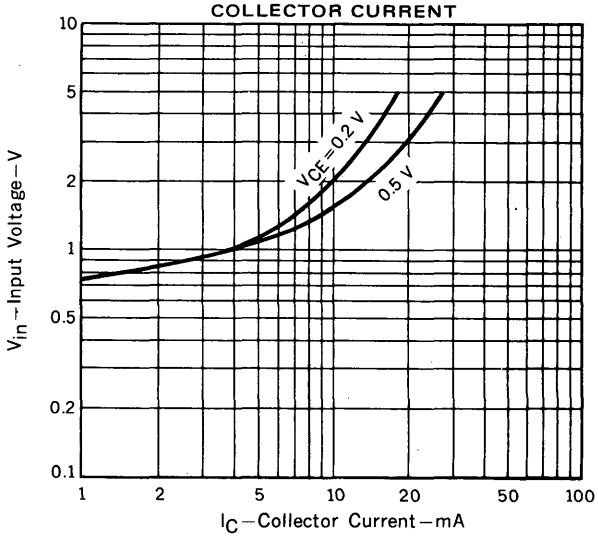
DC CURRENT GAIN vs. COLLECTOR CURRENT



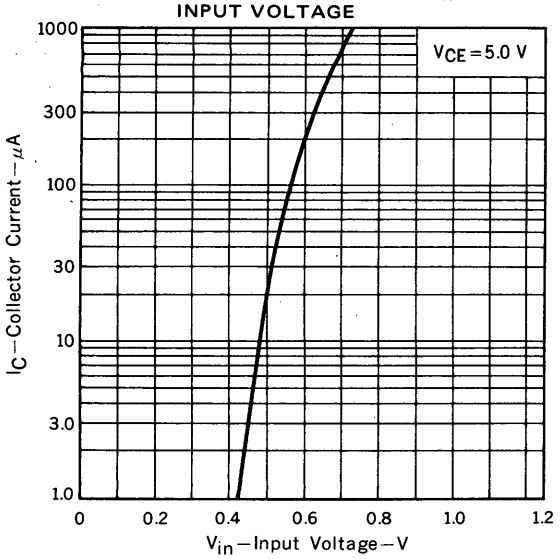
COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



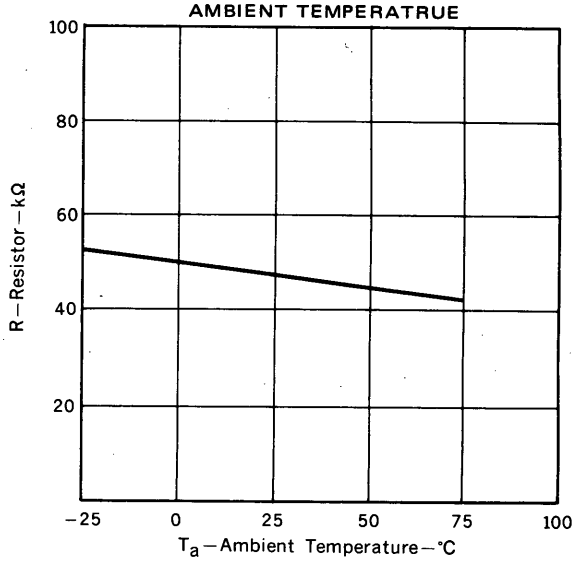
INPUT VOLTAGE vs. COLLECTOR CURRENT



COLLECTOR CURRENT vs.
INPUT VOLTAGE



RESISTOR vs.
AMBIENT TEMPERATRUE



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