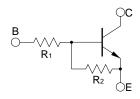
# SILICON TRANSISTOR

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

### FEATURES

NEC

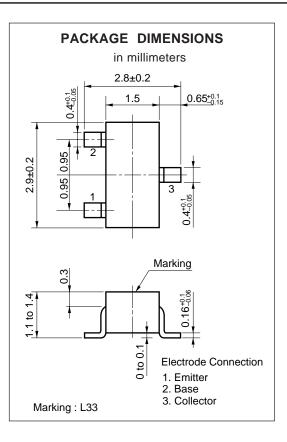
Resistors Built-in TYPE



• Complementary to FN1A4M

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25 $^{\circ}$ C)

Collector to Base Voltage	Vсво	60	V
Collector to Emitter Voltage	Vceo	50	V
Emitter to Base Voltage	Vево	10	V
Collector Current (DC)	lc	100	mA
Collector Current (Pulse)	lc	200	mA
Total Power Dissipation	Р⊤	200	mW
(T <sub>A</sub> = 25 °C)			
Junction temperature	ТJ	150	C
Storage Temperature Range	Tstg	-55 to +150	С



## ELECTRICAL CHARACTERISTICS (TA = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	Ісво			100	nA	VCB = 50 V, IE = 0
DC Current Gain	hfe1*	35	62	100		$V_{CE} = 5.0 \text{ V}, \text{ Ic} = 5.0 \text{ mA}$
DC Current Gain	hfe2*	80	230			Vce = 5.0 V, Ic = 50 mA
Collector Saturation Voltage	Vce(sat)*		0.05	0.2	V	Ic = 5.0 mA, I <sub>B</sub> = 0.25 mA
Low-Level Input Voltage	VIL*		1.08	0.8	V	$V_{CE} = 5.0, I_{C} = 100 \ \mu A$
High-Level Input Voltage	Vih*	3.0	1.4		V	$V_{CE} = 0.2 V, I_{C} = 5.0 mA$
Input Resistor	R1	7.0	10	13	kΩ	
Resistor Ratio	R1/R2	0.9	1.0	1.1		
Turn-on Time	ton		0.06	0.2	μs	Vcc = 5 V, $Vin = 5 V$
Storage Time	tstg		2.0	5.0	μs	$R_L = 1 k\Omega$
Turn-off Time	toff		2.15	6.0	μs	PW = 2 $\mu$ s, Duty Cycle $\leq$ 2 %

\* Pulsed: PW = 350  $\mu$ s, Duty Cycle = 2 %

6

T٩

20

0.2 V

20

5.0

50

100

25 °C

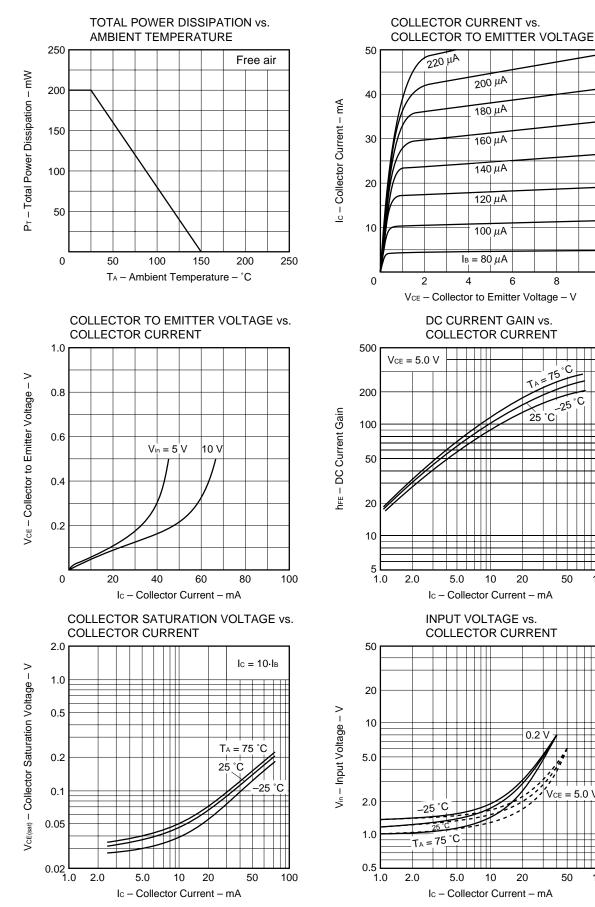
8

-25

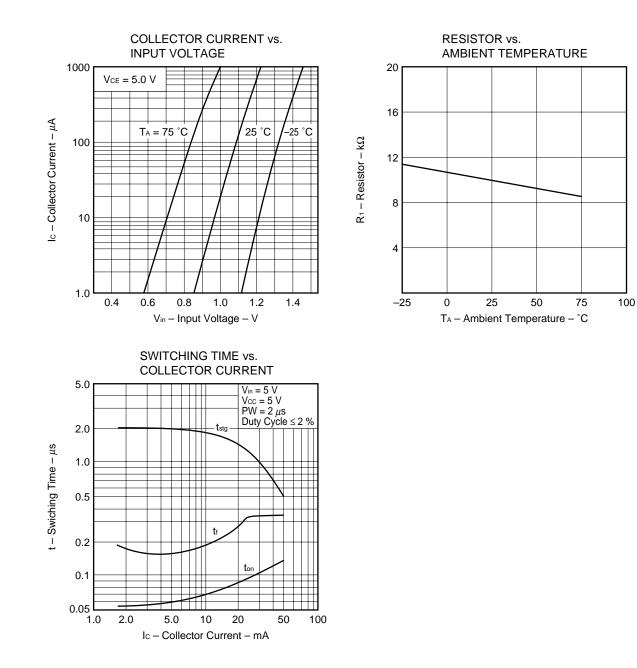
50

100

10



#### TYPICAL CHARACTERISTICS (TA = $25 \degree$ C)



#### REFERENCE

Document Name	Document No.
NEC semiconductor device reliability/quality control system	TEI-1202
Quality grade on NEC semiconductor devices	IEI-1209
Semiconductor device mounting technology manual	IEI-1207
Guide to quality assurance for semiconductor devices	MEI-1202
Semiconductor selection guide	MF-1134

[MEMO]

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- Standard: Computers, office equipment, communications equipment, test and measurement equipment, audio and visual equipment, home electronic appliances, machine tools, personal electronic equipment and industrial robots
- Special: Transportation equipment (automobiles, trains, ships, etc.), traffic control systems, anti-disaster systems, anti-crime systems, safety equipment and medical equipment (not specifically designed for life support)
- Specific: Aircrafts, aerospace equipment, submersible repeaters, nuclear reactor control systems, life support systems or medical equipment for life support, etc.

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Anti-radioactive design is not implemented in this product.

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