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Composite Transistor
Zener Diode

Resistor Built-in Transistor Silicon NPN Epitaxial Type

DESCRIPTION

RTE20N3M is a composite transistor built RT1N441 and Zener diode ($V_z=16V$) in SC-88 package.

Use of this product enables miniaturization of equipment and reduction parts and process.

FEATURE

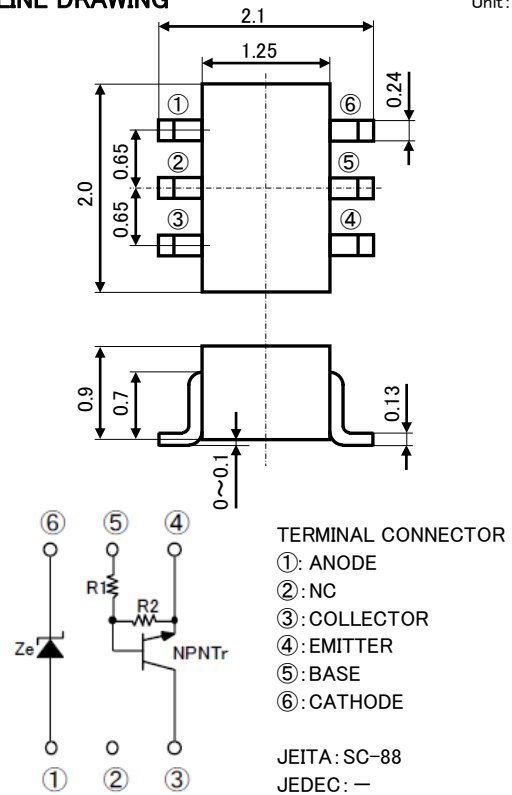
- This product is packaged in super mini PKG(6pin) and mount RT1N441($R_1=47k\Omega, R_2=47k\Omega$) and Zener diode($V_z=16V$).
- Enables miniaturization of equipment and high density mounting.

APPLICATION

- Power supply circuit
- Driver circuit

OUTLINE DRAWING

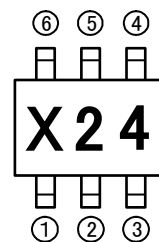
Unit: mm



MAXIMUM RATING ($T_a=25^\circ C$)

SYMBOL	PARAMETER	RATING	UNIT
V_{CBO}	Collector to Base voltage	50	V
V_{EBO}	Emitter to Base voltage	10	V
V_{CEO}	Collector to Emitter voltage	50	V
V_{IN}	Input voltage	40	V
I_C	Collector current	100	mA
I_{CM}	Peak Collector current	200	mA
P_T	Total dissipation	150	mW
T_j	Junction temperature	+150	$^\circ C$
T_{stg}	Storage temperature	-55~+150	$^\circ C$

MARKING



ELECTRICAL CHARACTERISTICS ($T_a=25^\circ C$)

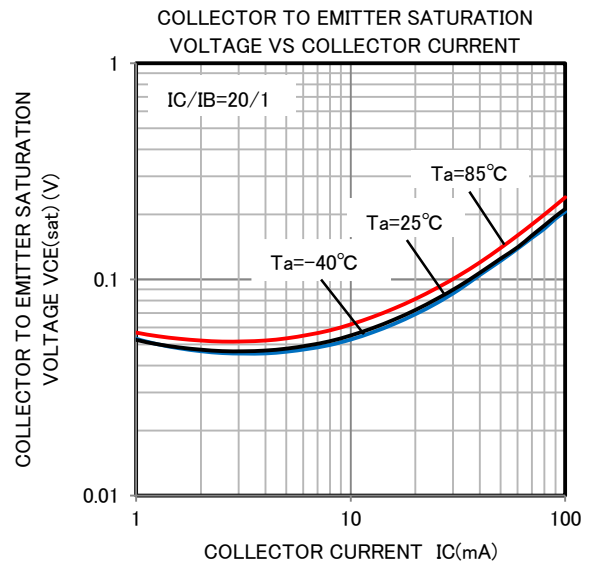
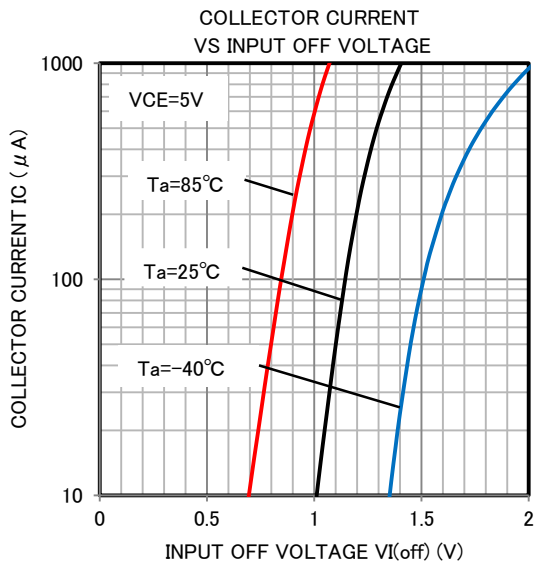
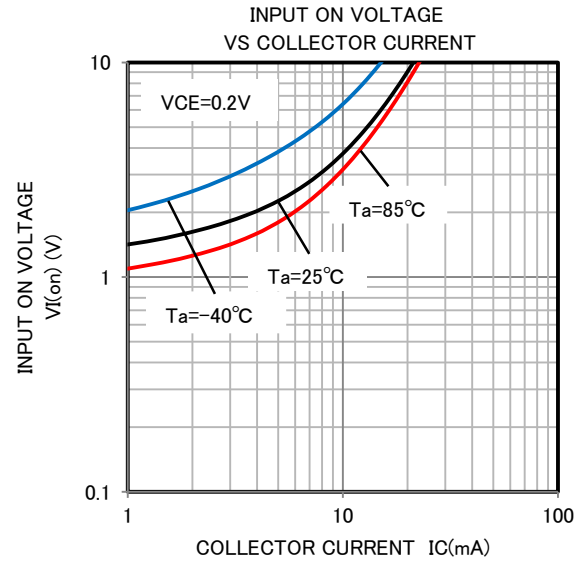
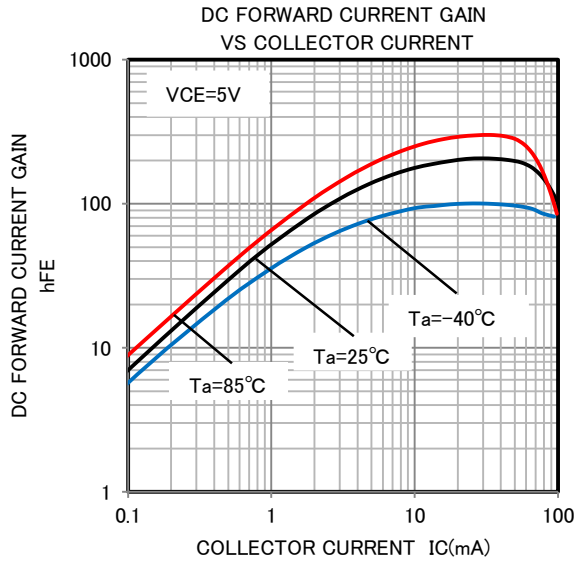
SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
I_{CBO}	Collector cut off current	$V_{CB}=50V, I_E=0A$	-	-	0.1	μA
I_{EBO}	Emitter cut off current	$V_{EB}=5V, I_C=0A$	41	53	76	μA
h_{FE}	DC forward current gain	$V_{CE}=5V, I_C=5mA$	50	-	-	-
$V_{CE(sat)}$	Collector to Emitter saturation voltage	$I_C=10mA, I_B=0.5mA$	-	-	0.3	V
$V_{I(ON)}$	Input on voltage	$V_{CE}=0.2V, I_C=5mA$	-	2.2	5.0	V
$V_{I(OFF)}$	Input off voltage	$V_{CE}=5V, I_C=100\mu A$	0.8	1.1	-	V
R_1	Input resistor	-	33	47	61	$k\Omega$
R_2/R_1	Resistor ratio	-	0.9	1.0	1.1	-
f_T	Gain band width product	$V_{CE}=6V, I_E=-10mA$	-	200	-	MHz
V_Z	Zener voltage	$I_Z=5mA$	15.1	16	16.9	V
I_R	Reverse current	$V_R=12V$	-	-	1.0	μA

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TYPICAL CHARACTERISTICS (Tr)



PRELIMINARY

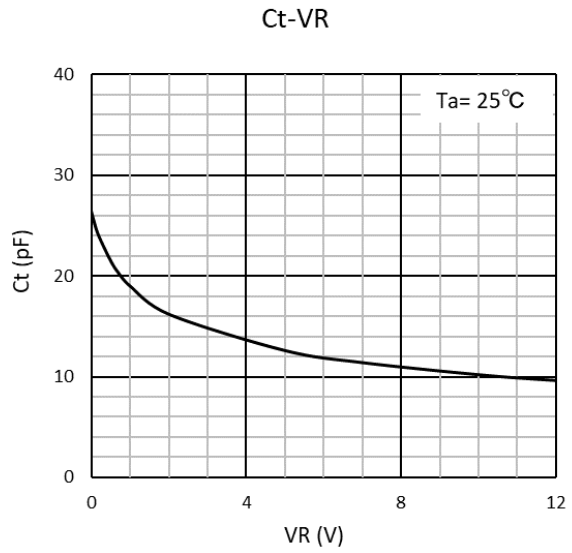
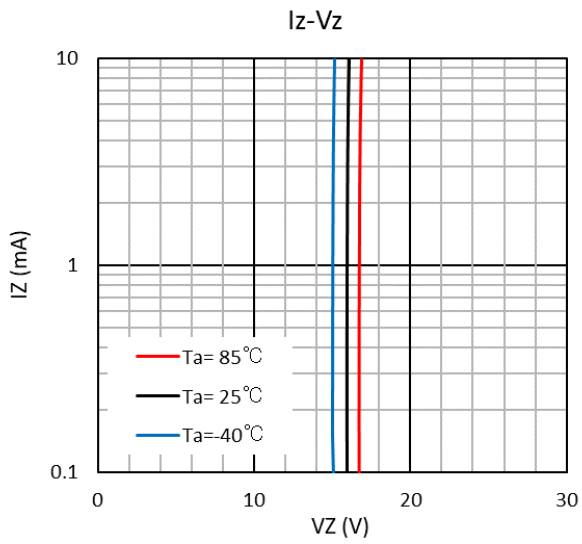
RTE20N3M

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TYPICAL CHARACTERISTICS (Di)



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