To all our customers

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Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

Cautions

Keep safety first in your circuit designs!

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2SC1515(K)

Silicon NPN Triple Diffused

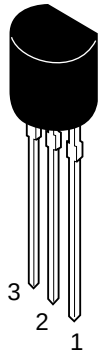
ADE-208-1055 (Z)
1st. Edition
Mar. 2001

Application

High voltage switching

Outline

TO-92 (1)



1. Emitter
2. Collector
3. Base

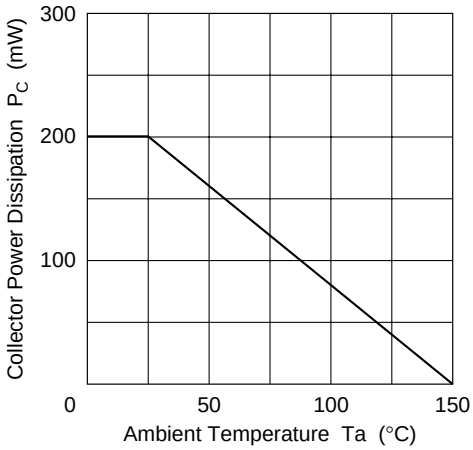
Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	200	V
Collector to emitter voltage	V_{CES}	200	V
	V_{CEO}	150	V
Emitter to base voltage	V_{EBO}	5	V
Collector current	I_C	50	mA
Collector power dissipation	P_C	200	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

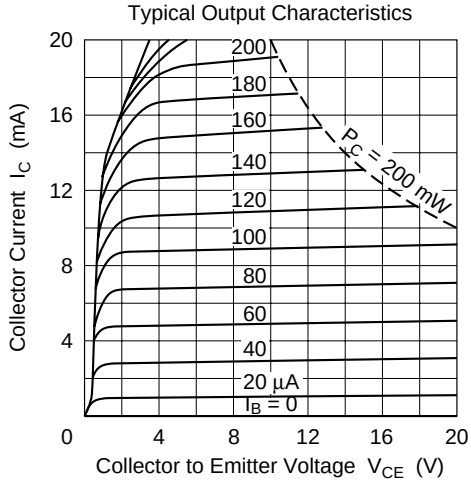
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CES}$	200	—	—	V	I_C = 10 µA, R_{BE} = 0
	$V_{(BR)CEO}$	150	—	—	V	I_C = 1 mA, R_{BE} =
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	I_E = 10 µA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	0.1	µA	V_{CB} = 20 V, I_E = 0
DC current transfer ratio	h_{FE}	30	—	300		V_{CE} = 6 V, I_C = 10 mA
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.0	V	I_C = 10 mA, I_B = 1 mA
Base to emitter saturation voltage	$V_{BE(sat)}$	—	—	1.5	V	I_C = 10 mA, I_B = 1 mA
Gain bandwidth product	f_T	60	—	—	MHz	V_{CE} = 6 V, I_C = 10 mA
Collector output capacitance	Cob	—	—	10	pF	V_{CB} = 6 V, I_E = 0, f = 1 MHz

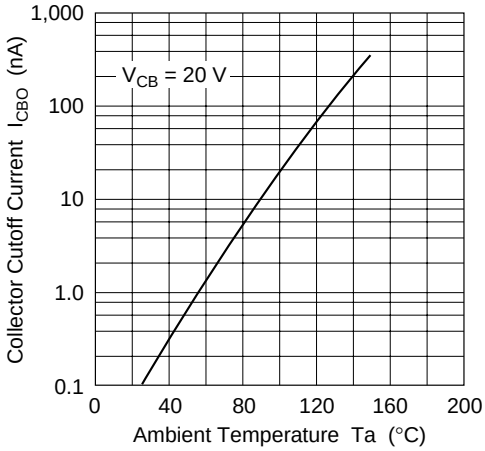
Maximum Collector Dissipation Curve



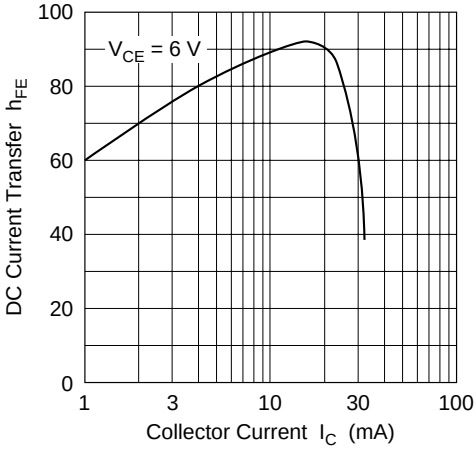
Typical Output Characteristics

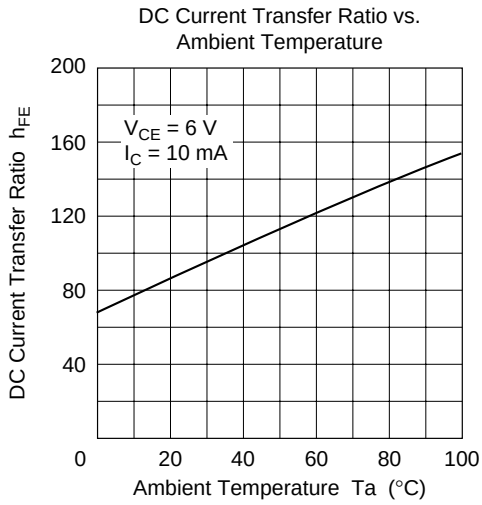


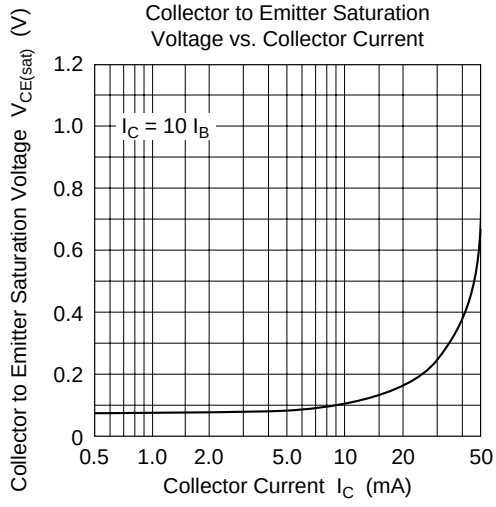
Collector Cutoff Current vs. Ambient Temperature



DC Current Transfer Ratio vs. Collector Current



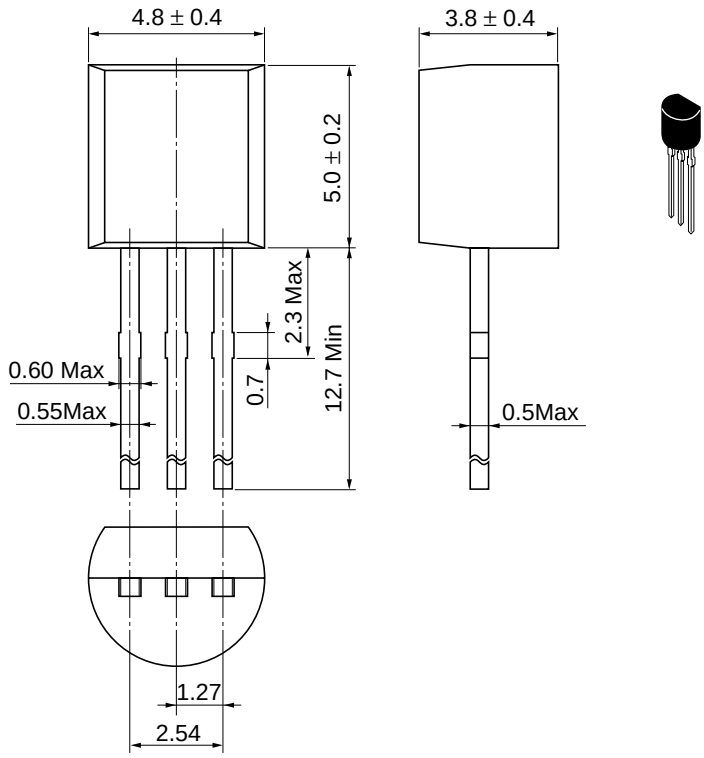

DC Current Transfer Ratio vs.
Ambient Temperature
DC Current Transfer Ratio h_{FE}
200
160
120
80
40
0
V_{CE} = 6 V
I_C = 10 mA
0
20
40
60
80
100
Ambient Temperature Ta (°C)


Collector to Emitter Saturation
Voltage vs. Collector Current
Collector to Emitter Saturation Voltage $V_{CE(sat)}$ (V)
1.2
1.0
0.8
0.6
0.4
0.2
0
I_C = 10 I_B
0.5
1.0
2.0
5.0
10
20
50
Collector Current I_C (mA)

Package Dimensions

As of January, 2001

Unit: mm



Hitachi Code	TO-92 (1)
JEDEC	Conforms
EIAJ	Conforms
Mass (reference value)	0.25 g

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