Ordering number : EN1334F

2SC3332

Bipolar Transistor
160V, 0.7A, Low V_{CE}(sat) NPN Single NP

ON Semiconductor®
http://onsemi.com

Features

- Hgih breakdown voltage
- Excellent h_{FE} linearity
- Wide SOA and highly resistant to breakdown
- Adoption of MBIT process

Specifications

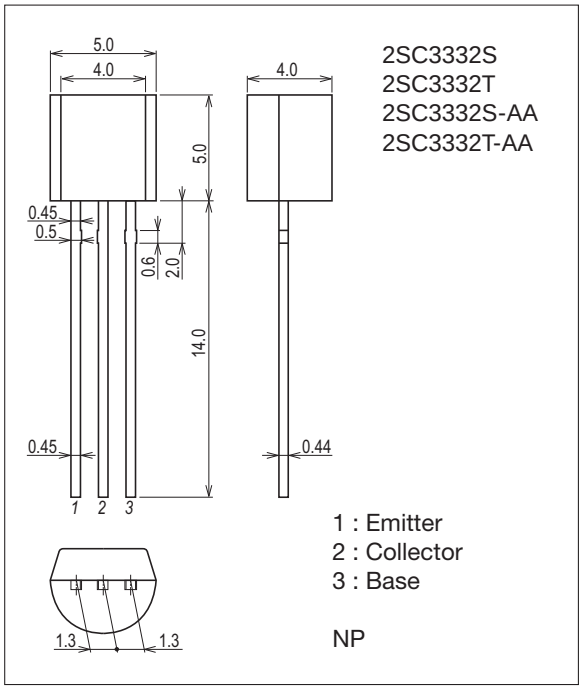
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector to Base Voltage	V_{CBO}		180	V
Collector to Emitter Voltage	V_{CEO}		160	V
Emitter to Base Voltage	V_{EBO}		6	V
Collector Current	I_C		0.7	A
Collector Current (Pulse)	I_{CP}		1.5	A
Collector Dissipation	P_C		700	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

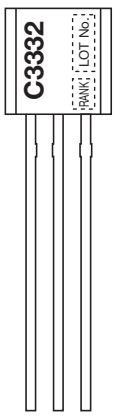
unit : mm (typ)
7522-002



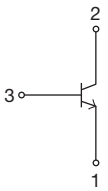
Product & Package Information

- Package : NP
- JEITA, JEDEC : SC-34A, TO-92, TO-226AA, SOT-54
- Minimum Packing Quantity : 1,500 pcs./box, 500pcs./bag

Marking



Electrical Connection



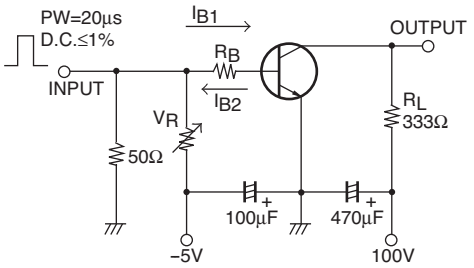
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=120V, I_E=0A			0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0A			0.1	μA
DC Current Gain	$h_{FE}1$	V_{CE}=5V, I_C=100mA	140*		400*	
	$h_{FE}2$	V_{CE}=5V, I_C=10mA	80			
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=50mA		120		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		8		pF
Collector to Emitter Saturation Voltage	V_{CE}(sat)	I_C=250mA, I_B=25mA		0.12	0.4	V
Base to Emitter Saturation Voltage	V_{BE}(sat)	I_C=250mA, I_B=25mA		0.85	1.2	V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0A	180			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, R_{BE}=∞	160			V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0A	6			V
Turn-ON Time	t_{on}	See specified Test Circuit.		50		ns
Storage Time	t_{stg}			1000		ns
Fall Time	t_f			60		ns

* : The 2SC3332 is classified by 100mA h_{FE} as follows :

Rank	S	T
h_{FE}	140 to 280	200 to 400

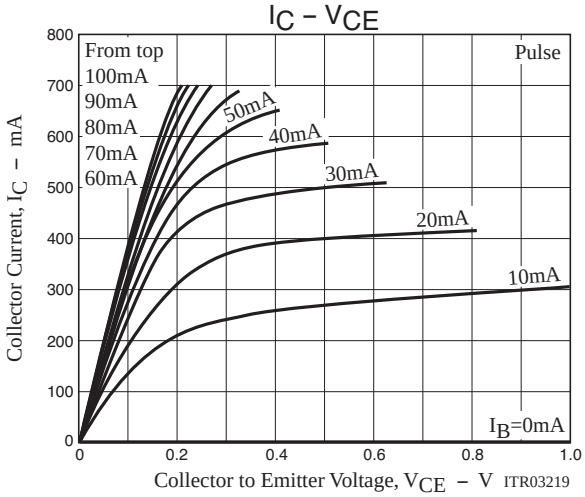
Switching Time Test Circuit

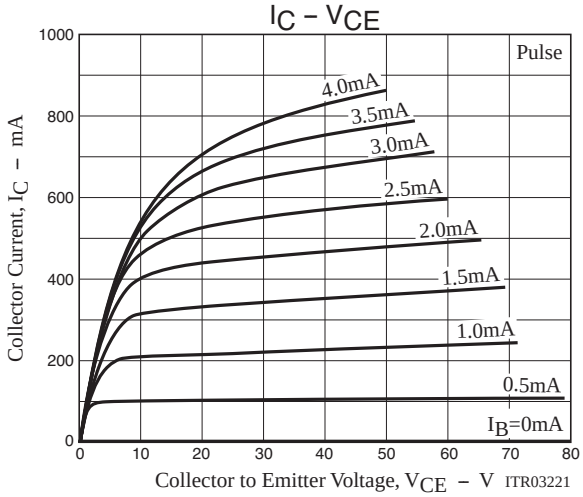


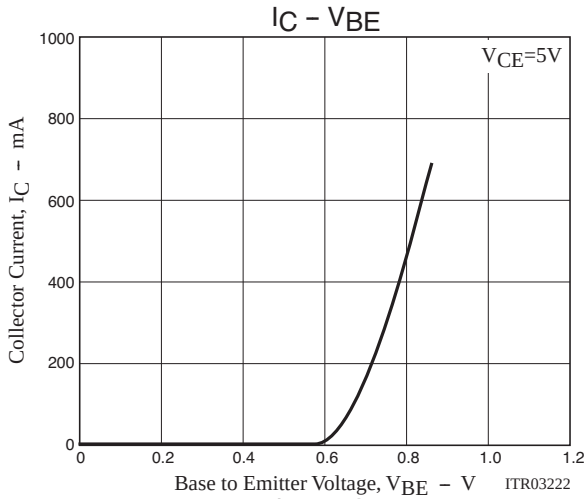
I_C=20I_{B1}=–20I_{B2}=300mA

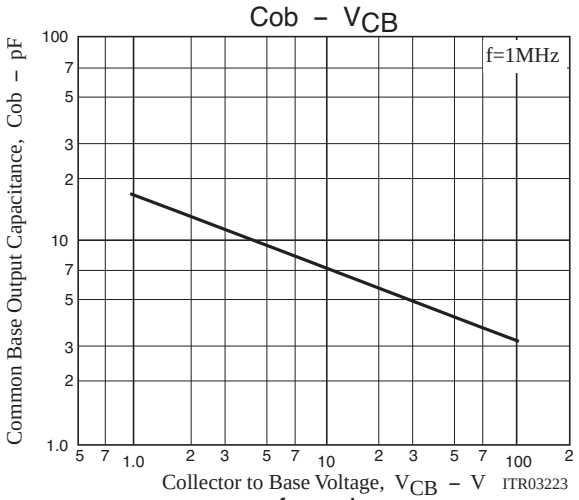
Ordering Information

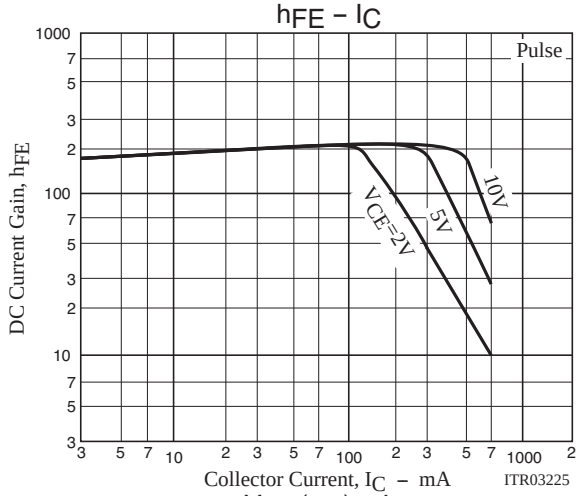
Device	Package	Shipping	memo
2SC3332S	NP	500pcs./bag	Pb Free
2SC3332T	NP	500pcs./bag	
2SC3332S-AA	NP	1,500pcs./box	
2SC3332T-AA	NP	1,500pcs./box	

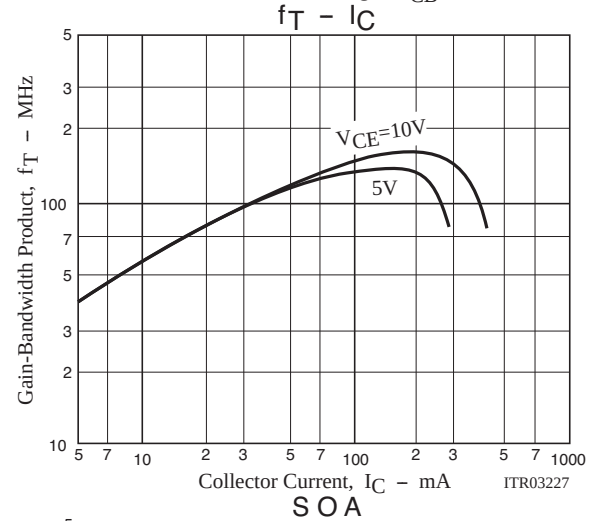


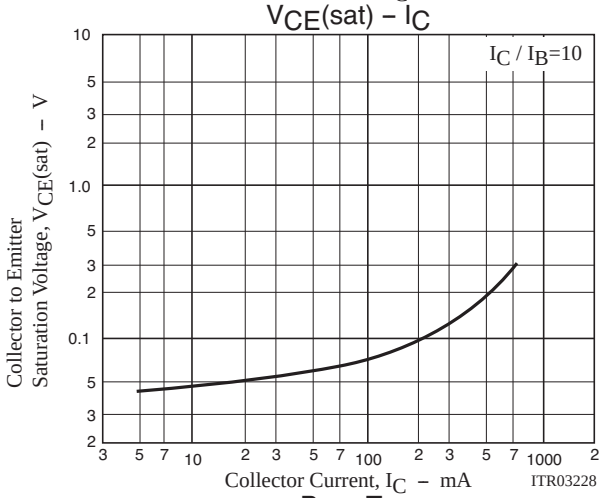


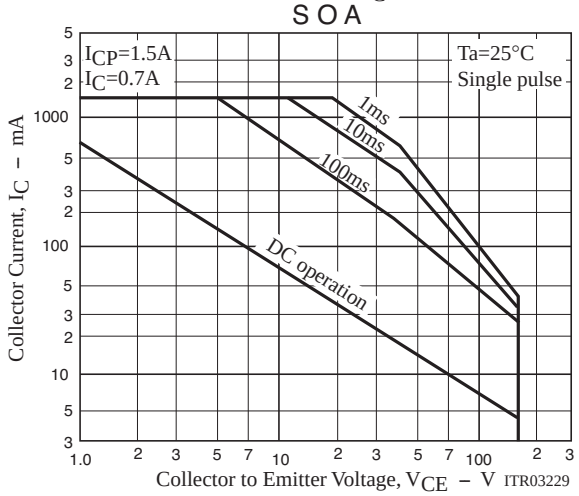

IC – VBE
VCE=5V
Collector Current, IC – mA
Base to Emitter Voltage, VBE – V
ITR03222

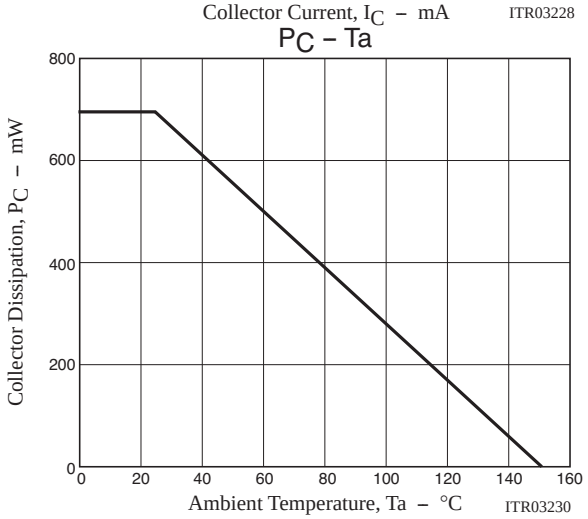

Cob – VCB
f=1MHz
Common Base Output Capacitance, Cob – pF
Collector to Base Voltage, VCB – V
ITR03223


hFE – IC
Pulse
VCE=2V
5V
10V
DC Current Gain, hFE
Collector Current, IC – mA
ITR03225


fT – IC
VCE=10V
5V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
ITR03227


VCE(sat) – IC
IC / IB=10
Collector to Emitter
Saturation Voltage, VCE(sat) – V
Collector Current, IC – mA
ITR03228

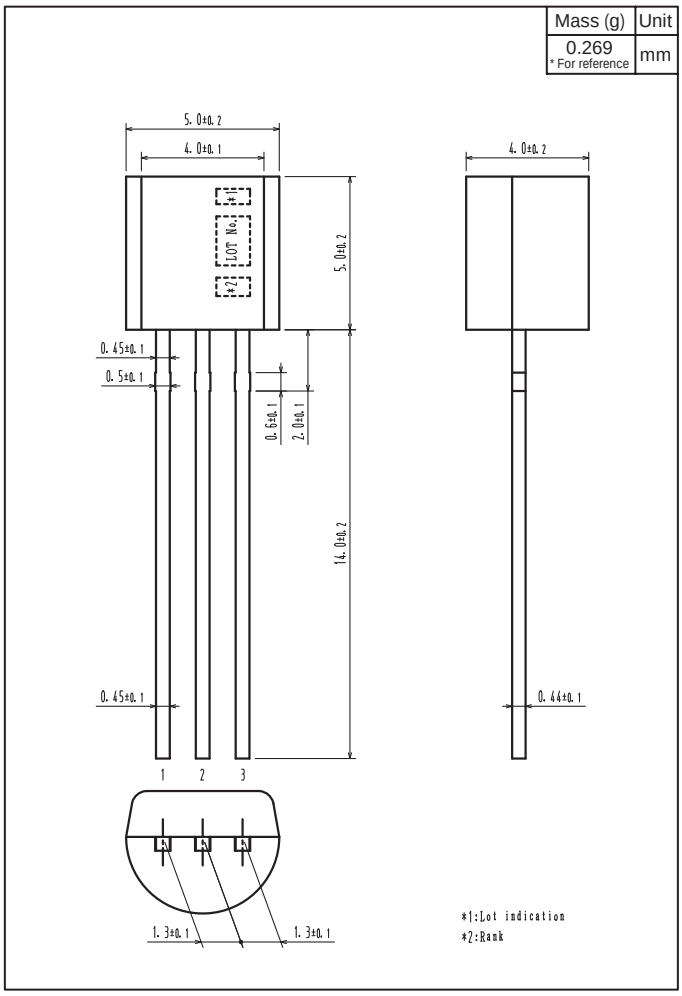

S O A
ICP=1.5A
IC=0.7A
Ta=25°C
Single pulse
1ms
10ms
100ms
DC operation
Collector Current, IC – mA
Collector to Emitter Voltage, VCE – V
ITR03229


PC – Ta
Collector Dissipation, PC – mW
Ambient Temperature, Ta – °C
ITR03230

Outline Drawing

2SC3332S, 2SC3332T

Mass (g)	Unit
0.269 * For reference	mm



Outline Drawing

2SC3332S-AA, 2SC3332T-AA