

2SC5490A

RF Transistor 10V, 30mA, $f_T=8\text{GHz}$, NPN Single SSFP



<http://onsemi.com>

Features

- Low-noise : NF=0.9dB typ (f=1GHz)
: NF=1.4dB typ (f=1.5GHz)
- Low-voltage, low-current operation ($V_{CE}=1\text{V}$, $I_C=1\text{mA}$)
: $f_T=3.5\text{GHz}$ typ
: $S_{21e}^2=5.5\text{dB}$ typ (f=1.5GHz)
- High gain : $S_{21e}^2=10\text{dB}$ typ (f=1.5GHz)
- High cut-off frequency : $f_T=8\text{GHz}$ typ
- Ultrasmall, slim flat-lead package (1.4mm×0.8mm×0.6mm)
- Halogen free compliance

Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

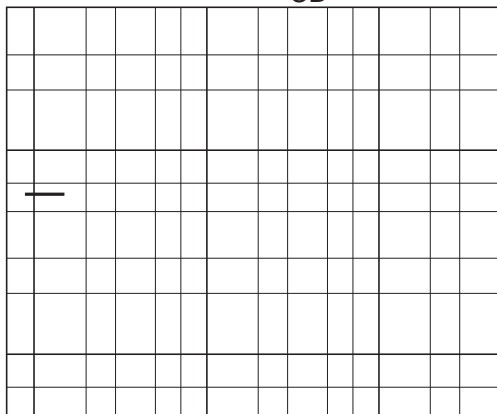
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

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Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =10V, I _E =0A			1.0	μA
Emitter Cutoff Current	IEBO	V _{EB} =1V, I _C =0A			10	μA
DC Current Gain	h _{FE}	V _{CE} =5V, I _C =10mA	90		200	
Gain-Bandwidth Product	f _{T1}	V _{CE} =5V, I _C =10mA	5	8		GHz
	f _{T2}	V _{CE} =1V, I _C =1mA		3.5		GHz
Output Capacitance	C _{ob}	V _{CB} =10V, f=1MHz		0.45	0.7	pF
Reverse Transfer Capacitance	C _{rc}	V _{CB} =10V, f=1MHz, I _C =1mA		0.05	0.1	pF
Reverse Time Constant	τ _{rc}	V _{CB} =10V, f=1MHz, I _C =1mA		0.2	0.3	ns
Early Voltage	V _A	V _{CE} =5V, I _C =1mA	129		129	V
Power Dissipation	P _D	V _{CE} =5V, I _C =1mA	1.2		1.2	W
Thermal Resistance	θ _{JC}		1.2		1.2	°C/W
Thermal Resistance	θ _{JL}		1.2		1.2	°C/W
Thermal Resistance	θ _{JA}		1.2		1.2	°C/W
Thermal Resistance	θ _{JC}		1.2		1.2	°C/W
Thermal Resistance	θ _{JL}		1.2		1.2	°C/W
Thermal Resistance	θ _{JA}		1.2		1.2	°C/W
Thermal Resistance	θ _{JC}		1.2		1.2	°C/W
Thermal Resistance	θ _{JL}		1.2		1.2	°C/W
Thermal Resistance	θ _{JA}		1.2		1.2	°C/W

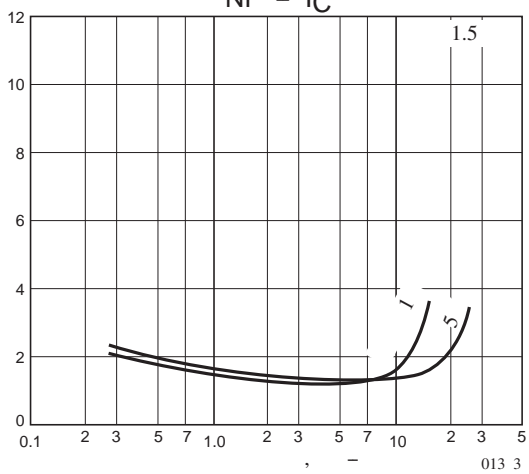
Cob - VCB



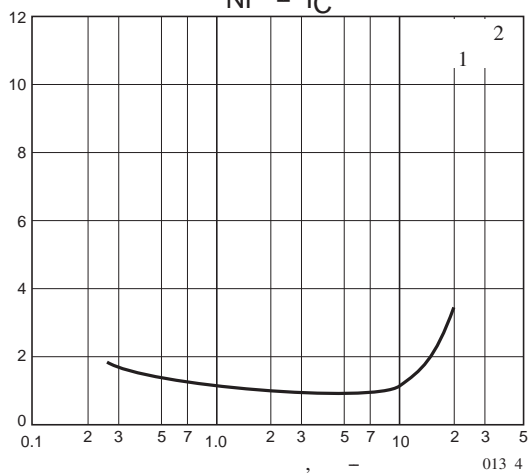
Cre - VCB



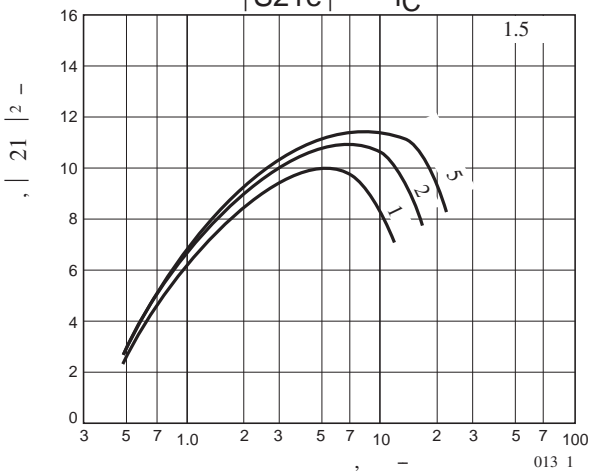
NF - Ic



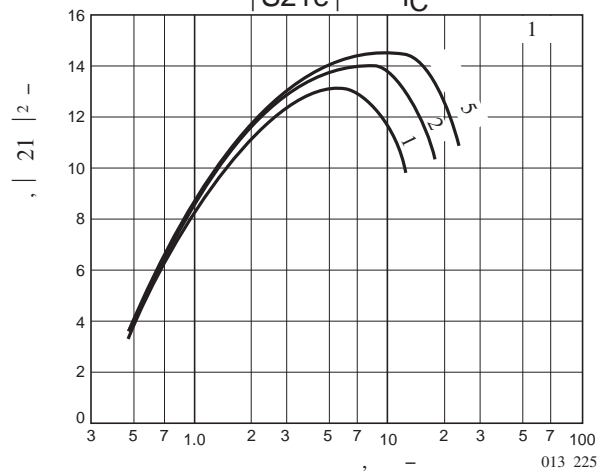
NF - Ic



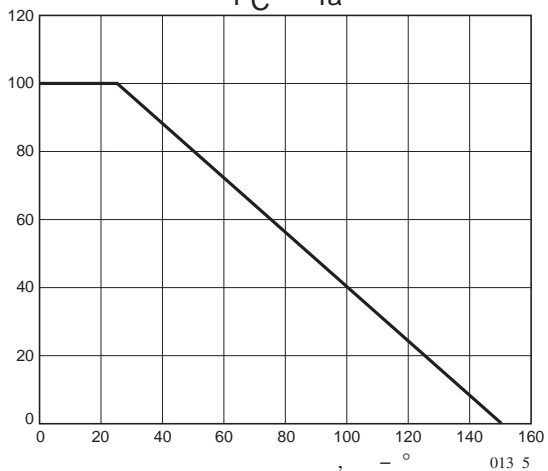
|S21e|^2 - Ic



|S21e|^2 - Ic



PC - Ta



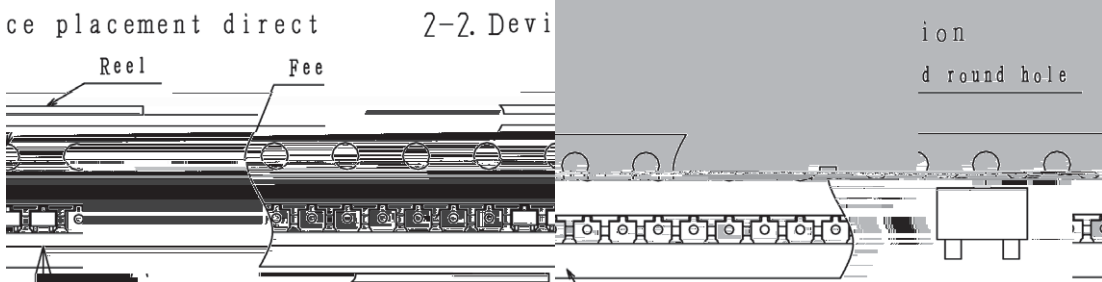
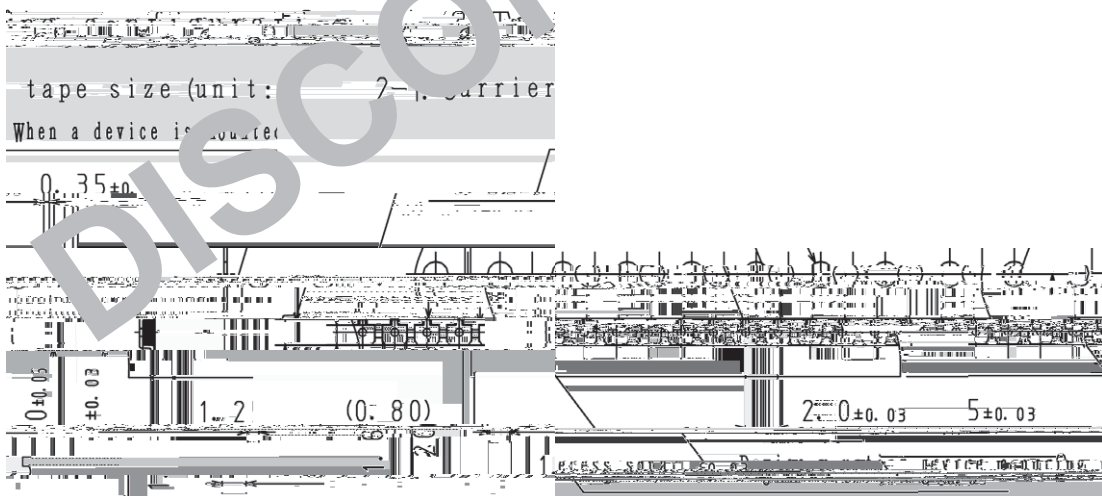
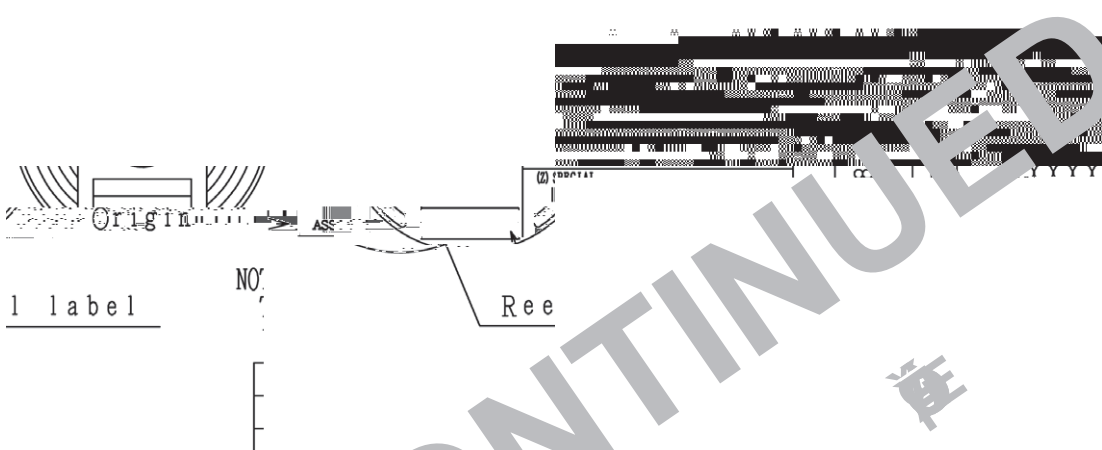
S Parameters (Common emitter)

$V_{CE}=5V, I_V$

Embossed Taping Specification
2SC5490A-TL-H

1. Packing Format

Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)		Packing format
		Reel	Inner box	
000	SSFP	8,000		



Outline Drawing
2SC5490A-TL-H

Land Pattern Example

Mass (g)	Unit

