EVVOSEMI®
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ESD TVS MOS LDO Diode Sensor DC-DC

Product Specification

Domestic Part Number	2SA970
Overseas Part Number	2SA970
Equivalent Part Number	2SA970

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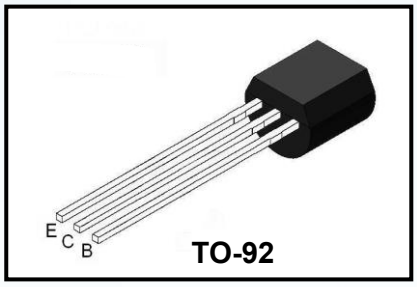
PNP Plastic-Encapsulate Transistors



Applications
- Low Noise Audio Amplifier

Features
- High DC current gain: h_{FE} = 150~700
- High breakdown voltage: V_{CEO} =-120 V
- Low pulse noise. Low 1/f noise

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	BV_{CBO}	-120	V
Collector-Emitter Voltage	BV_{CEO}	-120	V
Emitter-Base Voltage	BV_{EBO}	-5	V
Collector Current	I_C	-100	mA
Collector Power Dissipation	P_C	300	mW
Junction Temperature	Tj	125	℃
Storage Temperature	Tstg	-55～+150	℃

Electrical Characteristics (Ta=25℃)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Collector-base breakdown voltage	BV_{CBO}	I_C = -10μA，I_E = 0	-120			V
Collector-emitter breakdown voltage	BV_{CEO}	I_C = -1mA，I_B = 0	-120			V
Emitter-base breakdown voltage	BV_{EBO}	I_E = -10μA，I_C = 0	-5			V
Collector cut-off current	I_{CBO}	V_{CB} = -120V，I_E = 0			-0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB} = -5V，I_C = 0			-0.1	μA
DC current gain	h_{FE}	V_{CE} = -6V，I_c= -2mA	150		700	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = -10mA，I_B = -1mA			-0.3	V
Base -emitter saturation voltage	$V_{BE(on)}$	V_{CE} = -6V，I_B= -2mA			-0.85	V
Transition frequency	f_T	V_{CE} = -6V，I_C = -1mA		100		MH_Z
Collector output capacitance	C_{ob}	V_{CB} = -10V，I_E = 0,f=1MHz		4.0		pF

h_{FE} Classification

Classification	2SA970-GR	2SA970-BL
Range	150~300	350~700

Typical Characteristics

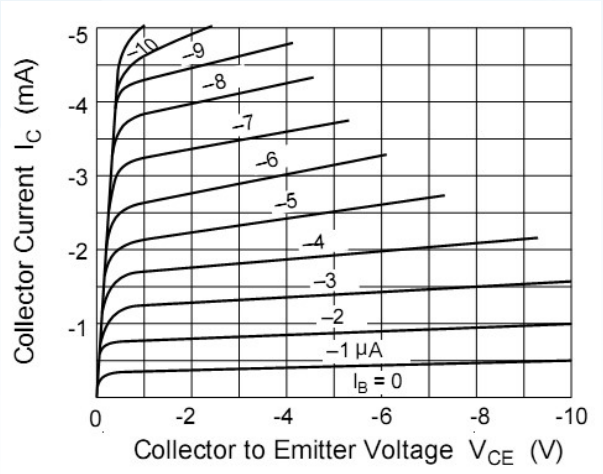


Fig.1 Static characteristics

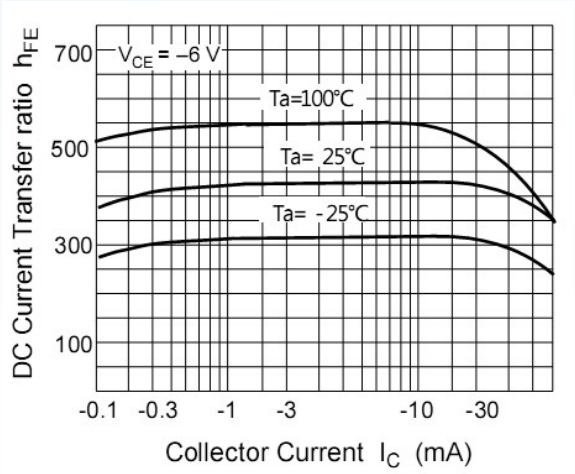


Fig.2 DC Current Gain

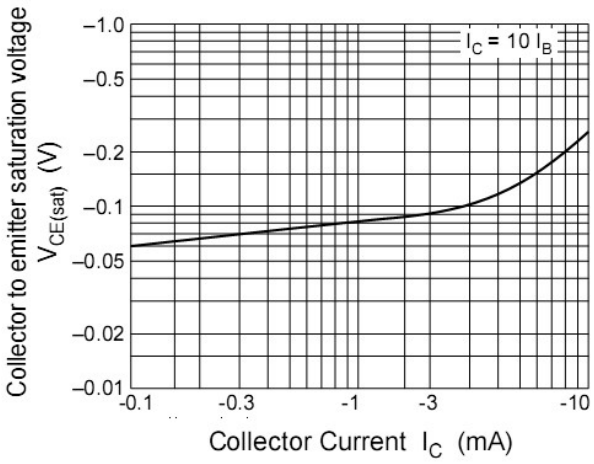


Fig.3 Collector-Emitter Saturation Voltage

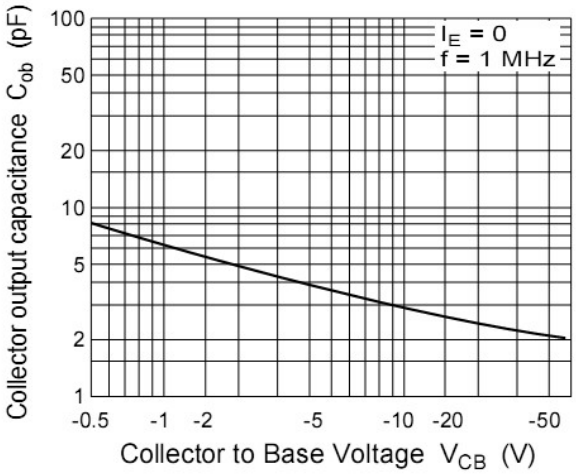


Fig.4 Collector Output Capacitance

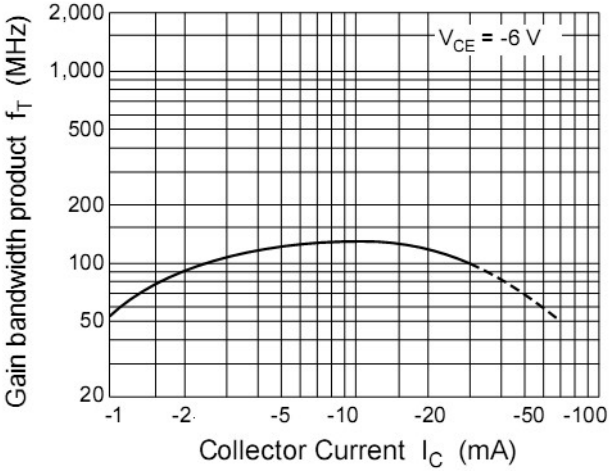


Fig.5 Current Gain Bandwidth Product

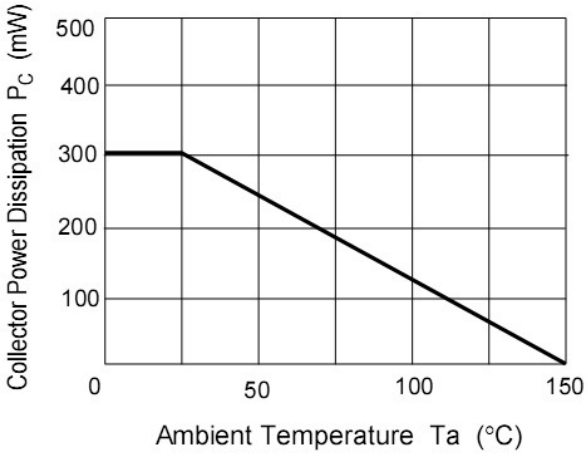
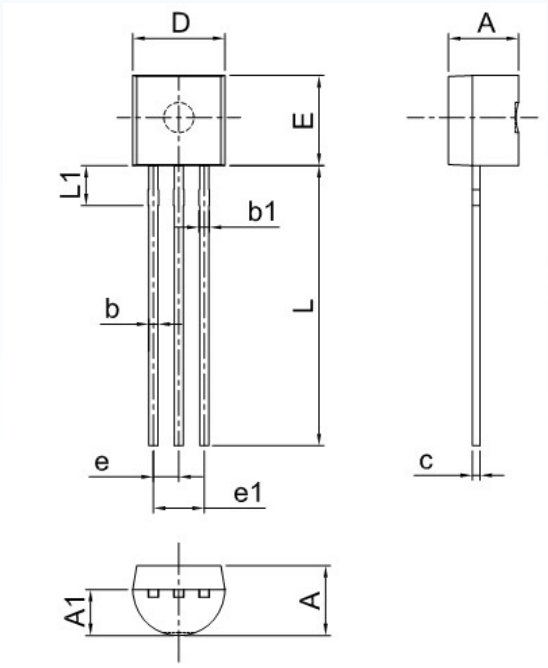


Fig 6. Maximum Collector Dissipation Curve

Package Dimensions

TO-92



Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	3.30	3.70	0.130	0.146
A1	2.30	2.70	0.091	0.106
b	0.40	0.50	0.016	0.020
b1	0.50	0.70	0.020	0.028
c	0.35	0.45	0.014	0.018
D	4.45	4.70	0.175	0.185
E	4.40	4.65	0.173	0.183
e	1.17	1.37	0.046	0.054
e1	2.34	2.64	0.092	0.104
L	13.50	14.50	0.531	0.571
L1	1.80	2.20	0.071	0.087

Package	Packing Method	Pack uantity
TO-92	Bulk	1000pcs/Bag
TO-92	Tape	2000pcs/Box

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