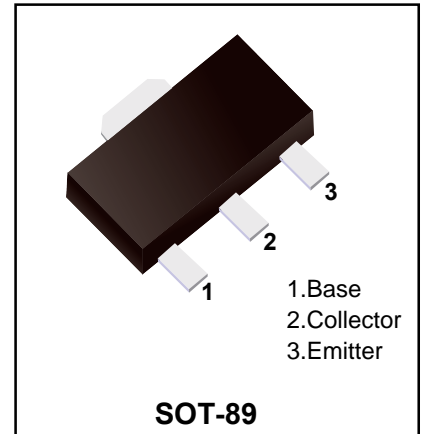
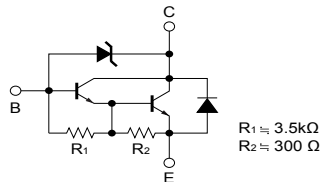


Features

- Built-in zener diode between collector and base.
- Zener diode has low dispersion.
- Darlington connection for high DC current gain.
- Built-in resistor between base and emitter.



Marking Code	
2SD2170	DM

Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V _{CB0}	80	V
Collector - Emitter Voltage	V _{CE0}	80	
Emitter - Base Voltage	V _{EB0}	6	
Collector Current - Continuous	I _c	2	A
Collector Current - Pulse	I _{CP}	3	
Collector Power Dissipation (Note.1)	P _C	0.5	W
		2	
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{stg}	-55 to 150	

Note. 1: Single pulse Pw=10ms,Duty=1/2

Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V _{CB0}	I _c = 100 μA, I _E = 0	80			V
Collector- emitter breakdown voltage	V _{CE0}	I _c = 1 mA, I _B = 0	80			
Emitter - base breakdown voltage	V _{EB0}	I _E = 100 μA, I _c = 0	6			
Collector-base cut-off current	I _{CB0}	V _{CB} = 70 V, I _E = 0			10	μA
Emitter cut-off current	I _{EB0}	V _{EB} = 5V, I _c =0			3	mA
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =1 A, I _B =1mA			1.5	V
DC current gain	h _{FE}	V _{CE} = 2V, I _c = 1 A	1000		10000	
Collector output capacitance	C _{ob}	V _{CB} = 10V, I _E = 0,f=1MHz		25		pF
Transition frequency	f _T	V _{CE} = 5V, I _E = -100mA,f=30MHz		80		MHz

Typical Characteristics

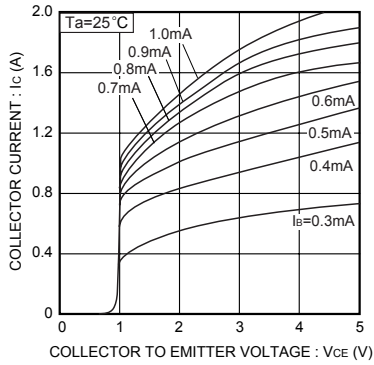


Fig.1 Grounded emitter output characteristics

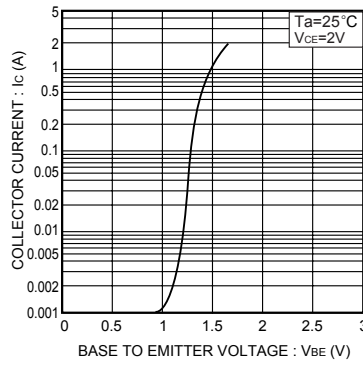


Fig.2 Grounded emitter propagation characteristics

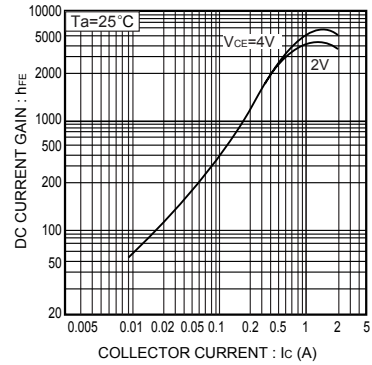


Fig.3 DC current gain vs. collector current

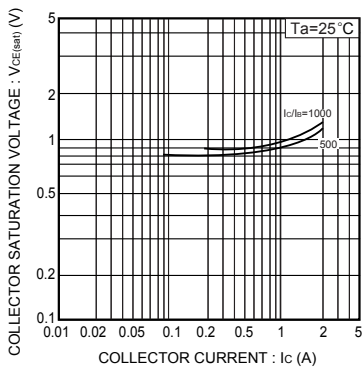


Fig.4 Collector-emitter saturation voltage vs. collector current

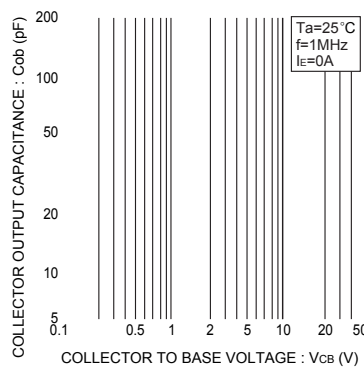


Fig.5 Collector output capacitance vs. collector-base voltage

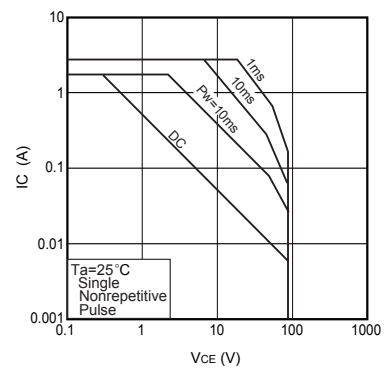


Fig.6 Safe operating area

Ordering information

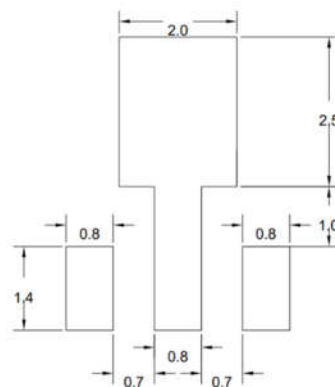
Package	Packing Description	Base Quantity	Packing Quantity
SOT-89	Tape/Reel,7"reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton

Package Dimensions

SOT-89

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.40	1.60	0.055	0.063
b	0.32	0.52	0.013	0.020
b1	0.38	0.58	0.015	0.023
c	0.35	0.45	0.014	0.018
D	4.40	4.60	0.173	0.181
D1	1.45	1.65	0.057	0.065
D2	1.70	1.80	0.067	0.071
E	2.30	2.60	0.091	0.102
E1	3.95	4.25	0.156	0.167
E2	1.80	2.00	0.071	0.079
e	1.40	1.60	0.055	0.063
e1	2.80	3.20	0.110	0.126
L	0.90	1.20	0.035	0.047

The recommended mounting pad size



UNIT:MM

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