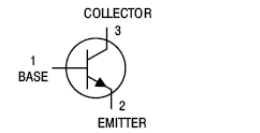
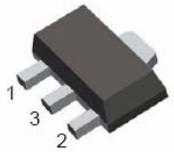
NPN Silicon Epitaxial Transistor 2SD999

FEATURES

- Low Collector Saturation Voltage:
  $V_{CE(sat)}$<0.4V(I_C=1.0A,I_B =100mA)
- Excellent DC Current Gain Linearity:
  h_{FE}=140Typ.(V_{CE}=1.0V, I_C=1.0A)
- Complements to PNP type 2SB798

Pb
Lead-free





SOT-89

ORDERING INFORMATION

Type No.	Marking	Package Code
2SD999	CM/CL/CK	SOT-89

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	**Parameter**	**Value**	**Unit**
V_{CBO}	Collector-Base Voltage	30	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	5.0	V
I_C	Collector Current	1.0	A
P_C	Collector power dissipation	2.0	W
T_j	Junction Temperature	-55 to +150	℃
T_{stg}	Storage Temperature	-55 to +150	℃

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ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	30			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=2mA ,I_B=0	25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	5.0			V
Collector cut-off current	I_{CBO}	V_{CB}=30V, I_E=0			0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB}=5.0V,I_C=0			0.1	uA
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=1.0A,I_B =0.1A		0.21	0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=1.0A,I_B =0.1A		1.0	1.2	V
Base to emitter voltage	V_{BE}	V_{CE}=6.0V, I_C=10mA	600	630	700	mV
DC current gain(note)	h_{FE}	V_{CE}=1.0V, I_C=100mA	90	200	400	
		V_{CE}=1.0V, I_C=1.0A	50	140		
Current gain bandwidth product	f_T	V_{CE}=6V,I_E=-10mA		130		MHz
Output Capacitance	C_{ob}	V_{CB}=20V, f=1MHz ,I_E=0A		22		pF

CLASSIFICATION OF h_{FE}

RANK	M	L	K
RANGE	90-180	135-270	200-400

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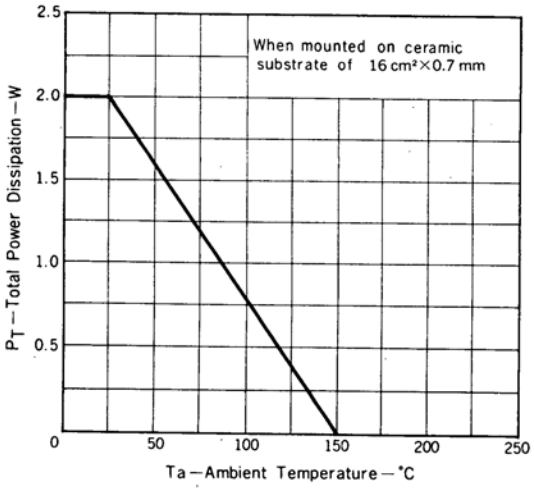
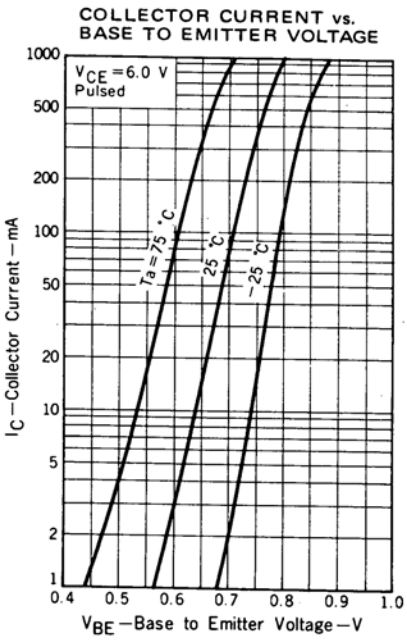
TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

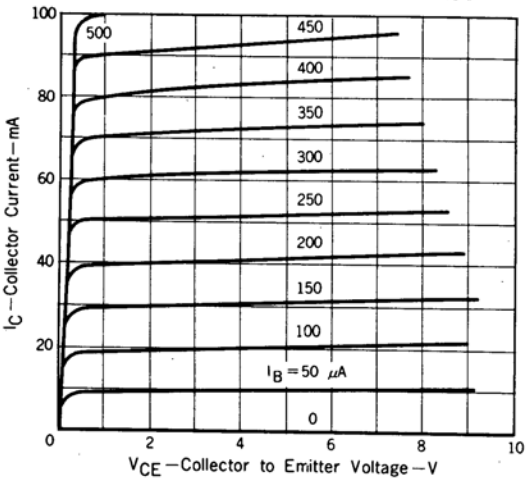
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



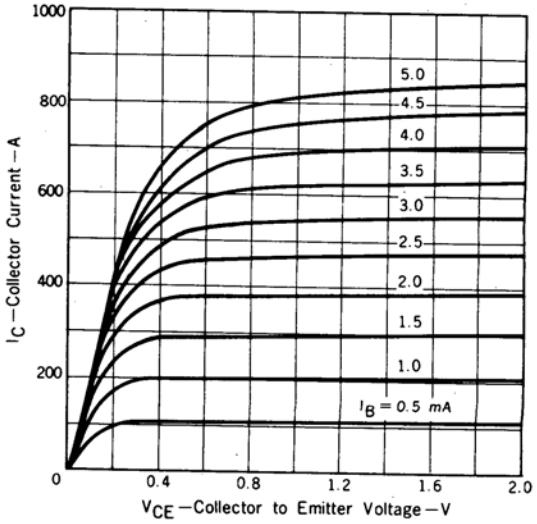
COLLECTOR CURRENT vs. BASE TO EMITTER VOLTAGE



COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



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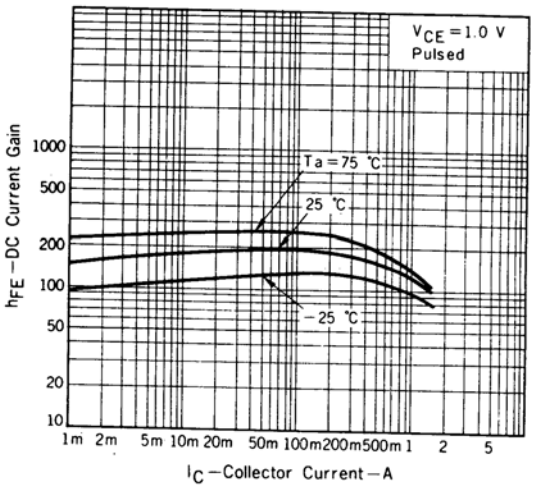
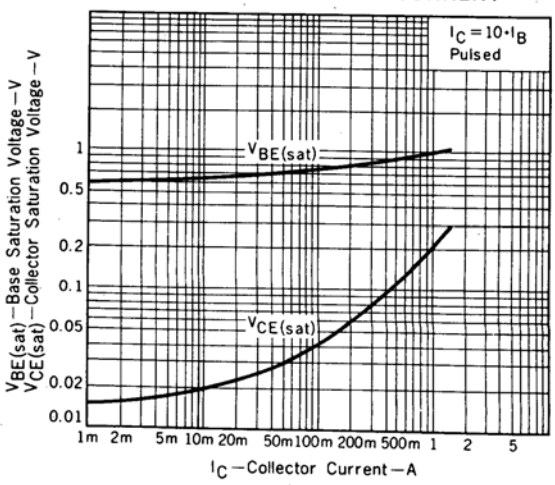
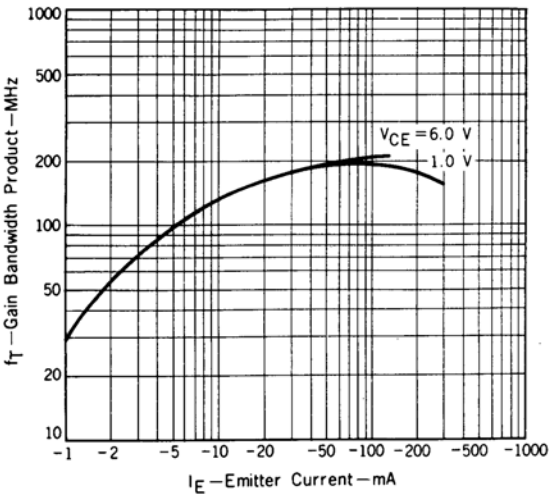
DC CURRENT GAIN vs. COLLECTOR CURRENT



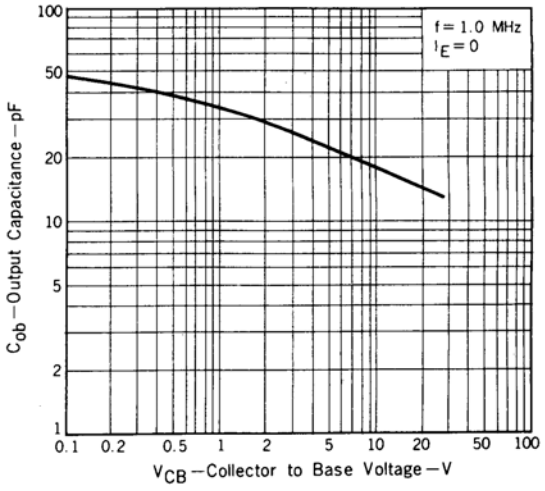
BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



GAIN BANDWIDTH PRODUCT vs. EMITTER CURRENT



OUTPUT CAPACITANCE vs. COLLECTOR TO BASE VOLTAGE



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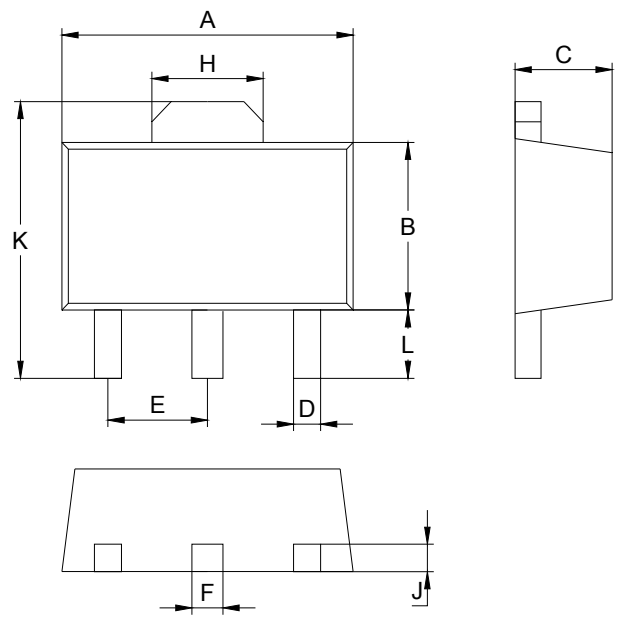
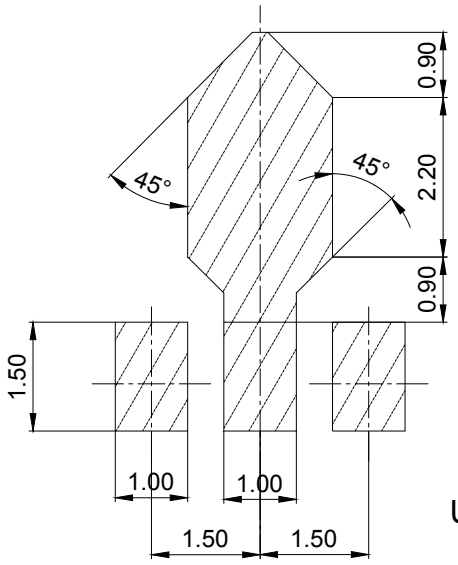
PACKAGE OUTLINE

Plastic surface mounted package SOT-89



SOT-89		
Dim	Min	Max
A	4.30	4.70
B	2.25	2.65
C	1.50 Typical	
D	0.40 Typical	
E	1.40	1.60
F	0.48 Typical	
H	1.60	1.80
J	0.40 Typical	
L	0.90	1.10
K	3.95	4.35
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit:mm

PACKAGE INFORMATION

Device	Package	Shipping
2SD999	SOT-89	1000/Tape&Reel