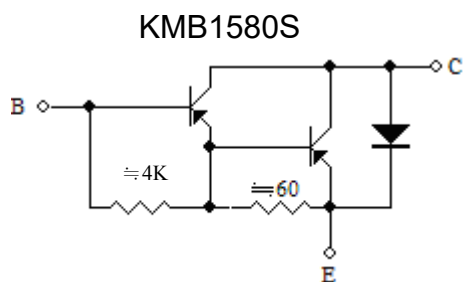


PNP Epitaxial Planar Transistor

Description

The KMB1580S is a PNP Darlington transistor, designed for use in general purpose amplifier and low speed switching application. Pb-free package process is adopted.

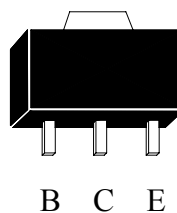
Equivalent Circuit



B : Base
C : Collector
E : Emitter

Outline

SOT-89



Ordering Information

Device	Package	Shipping
KMB1580S	SOT-89 (Pb-free lead plating and halogen-free package)	1000 pcs / Tape & Reel

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V _{CBO}	-120	V
Collector-Emitter Voltage	V _{CEO}	-120	
Emitter-Base Voltage	V _{EBO}	-5	
Collector Current (DC)	I _C	-4	A
Collector Current (Pulse)	I _{CP}	-6 (Note 1)	
Thermal Resistance, Junction to Ambient	R _{θJA}	208	°C/W
		125 (Note 2)	
		62.5 (Note 3)	
		85 (Note 4)	
Thermal Resistance, Junction to Case	R _{θJC}	43	
Power Dissipation	P _D	0.7	W
		1.2 (Note 2)	
		2.4 (Note 3)	
		1.8 (Note 4)	
Power Dissipation @ T _C =25°C		3.5	
Operating Junction Temperature Range	T _J	-55~+175	°C
Storage Temperature Range	T _{stg}	-55~+175	

Note : 1. Single Pulse P_w ≤ 350μs, Duty ≤ 2%.

2. When mounted on a FR-4 PCB with area measuring 10×10×1 mm.

3. When mounted on a ceramic board with area measuring 40×40×1mm.

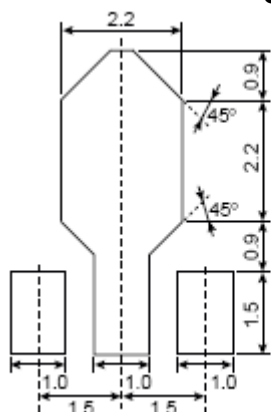
4. When mounted on a FR-4 PCB with area measuring 30×30×1 mm.

Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CEO}	-120	-	-	V	I _C =-1mA, I _B =0
BV _{CBO}	-120	-	-	V	I _C =-100μA, I _E =0
I _{CBO}	-	-	-100	nA	V _{CB} =-120V, I _E =0
I _{CEO}	-	-	-1	μA	V _{CE} =-120V, I _B =0
I _{EBO}	-	-	-2	mA	V _{EB} =-5V, I _C =0
*V _{CE(sat)}	-	-	-1.8	V	I _C =-2A, I _B =-2mA
*V _{BE(on)}			-2.2	V	V _{CE} =-4V, I _C =-2A
*h _{FE1}	1000	-	-	-	V _{CE} =-4V, I _C =-1A
*h _{FE2}	1000	-	-	-	V _{CE} =-4V, I _C =-2A
C _{ob}	-		200	pF	V _{CB} =-10V, I _E =0A, f=1MHz

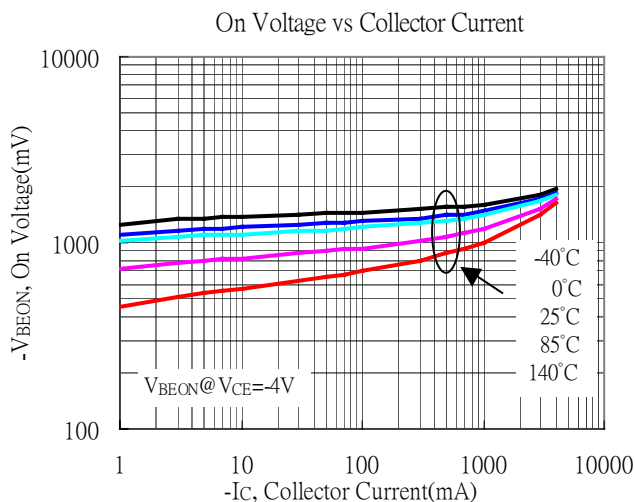
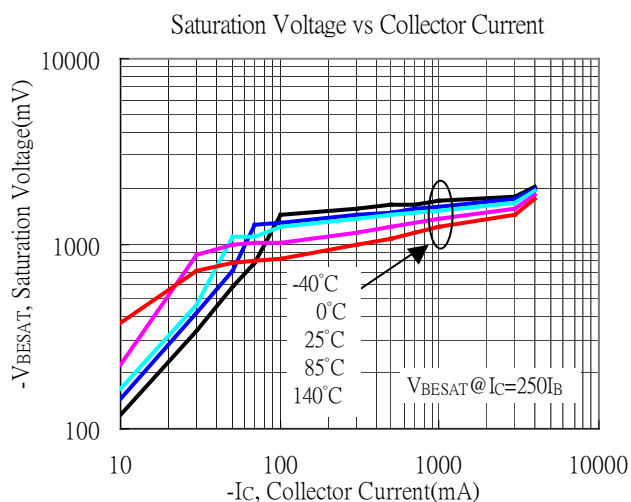
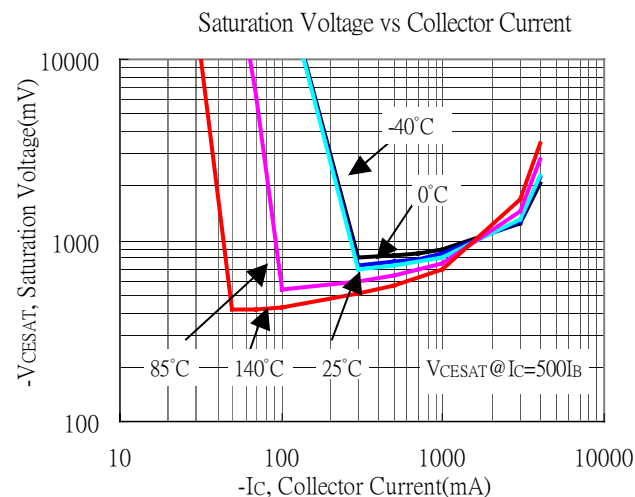
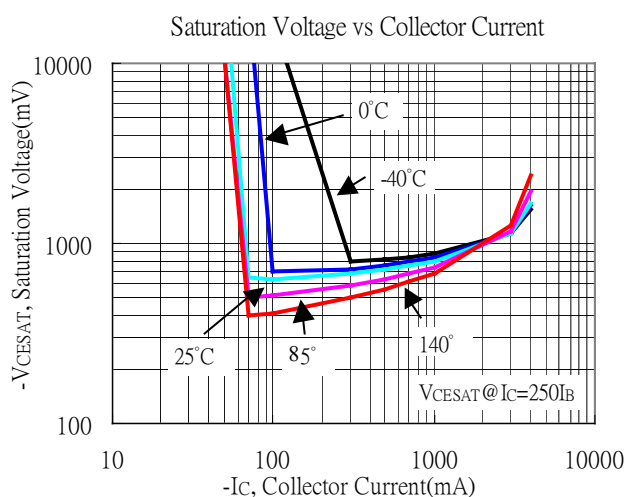
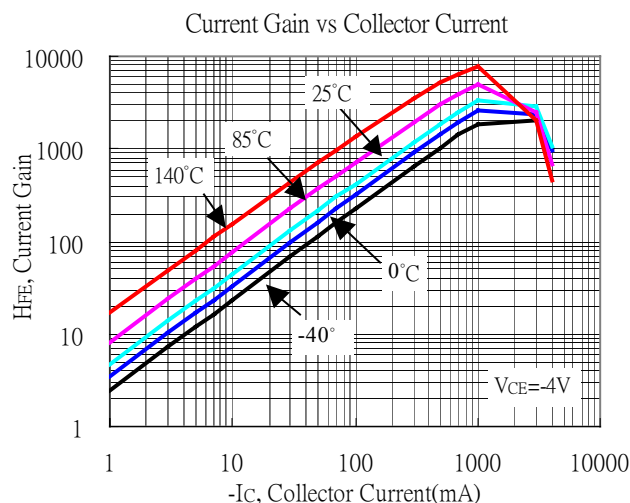
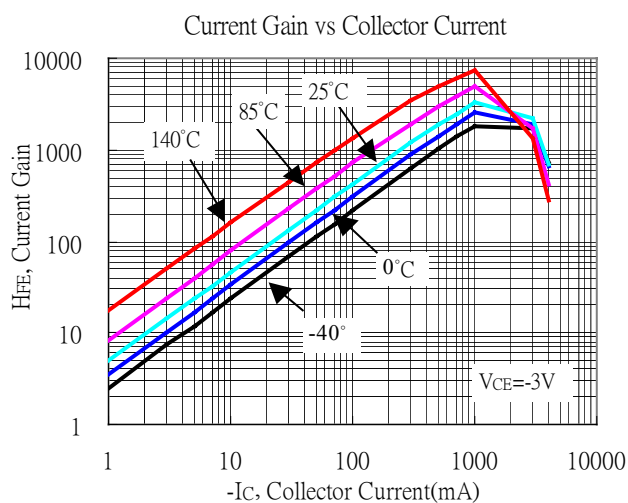
*Pulse Test : Pulse Width ≤ 380μs, Duty Cycle ≤ 2%

Recommended soldering footprint



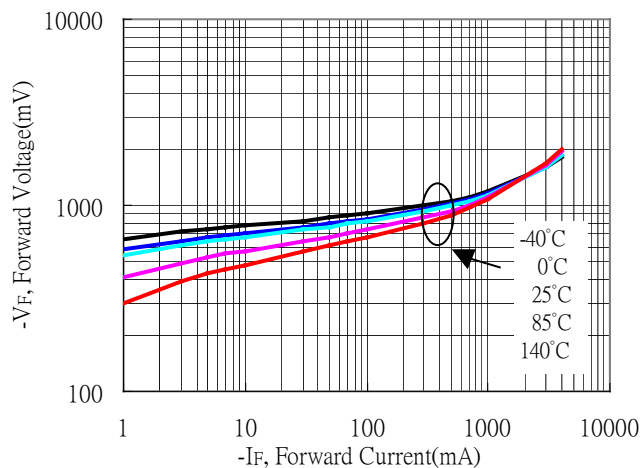
unit : mm

Typical Characteristics

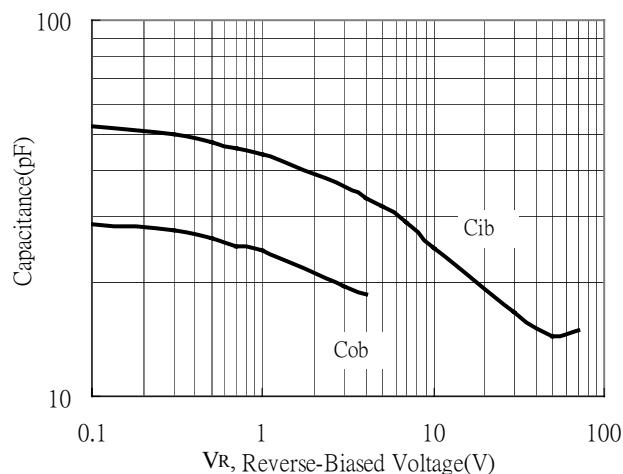


Typical Characteristics(Cont.)

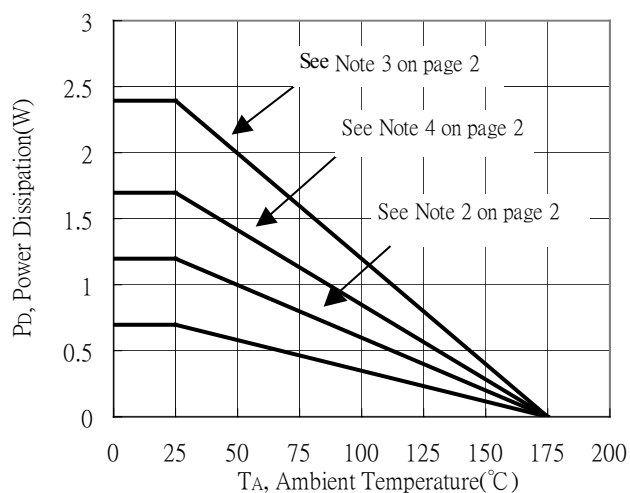
Built-in Diode Characteristics



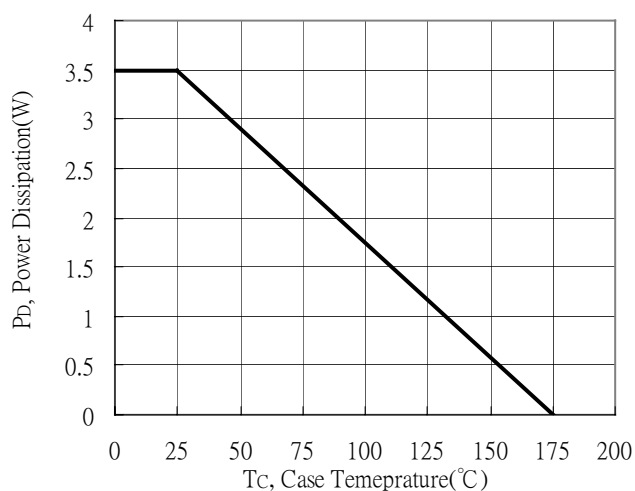
Capacitance vs Reverse-Biased Voltage



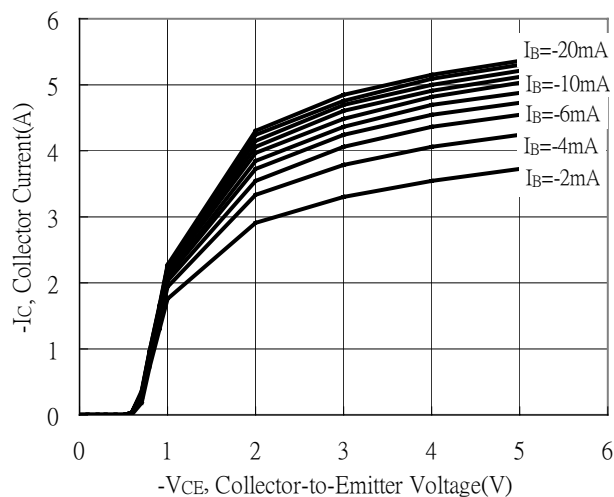
Power Derating Curves



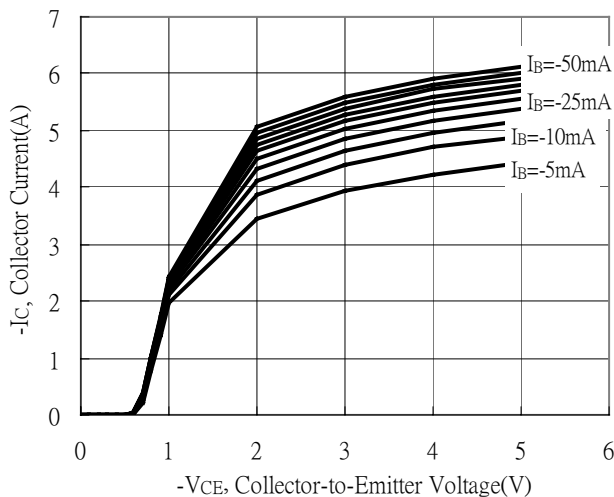
Power Derating Curve



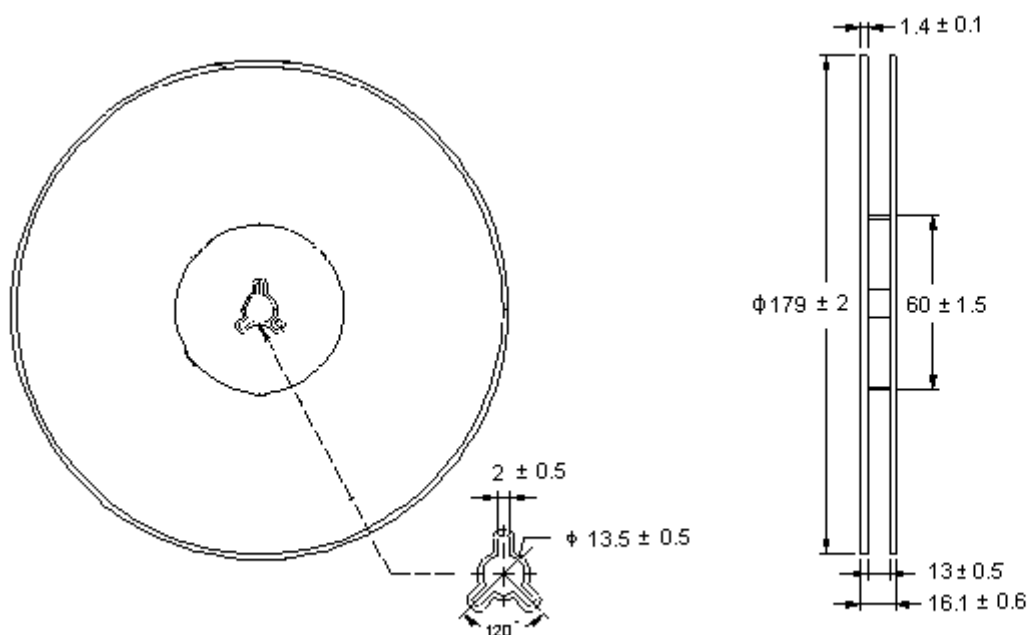
Emitter Grounded Output Characteristics



Emitter Grounded Output Characteristics

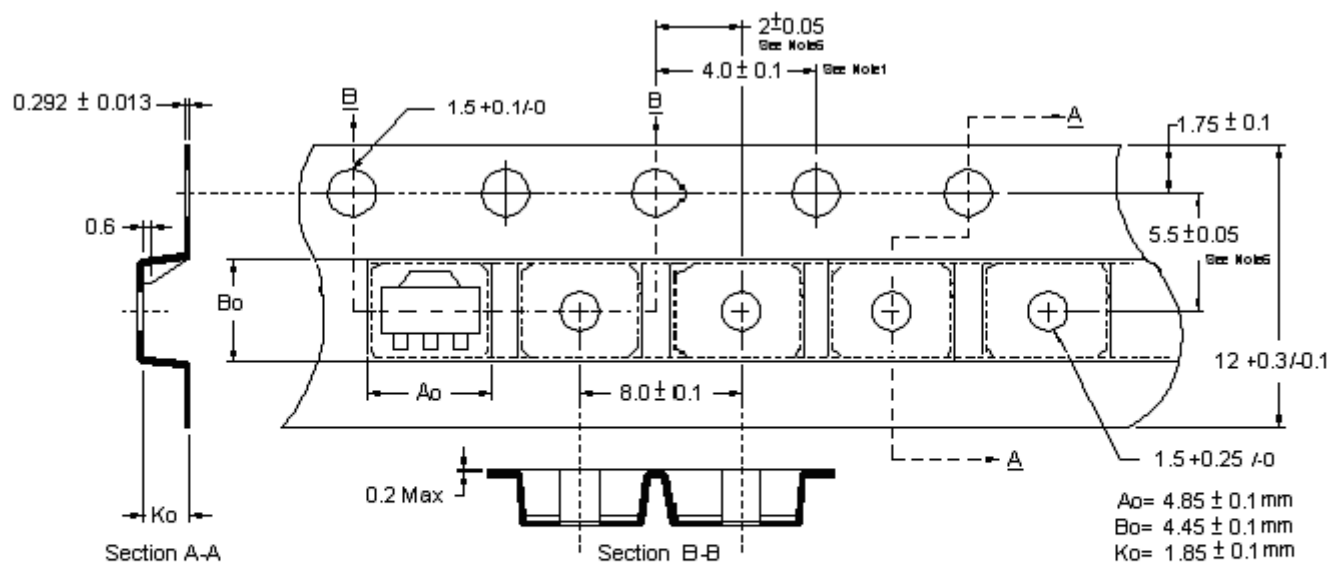


Reel Dimension



Unit: millimeter

Carrier Tape Dimension

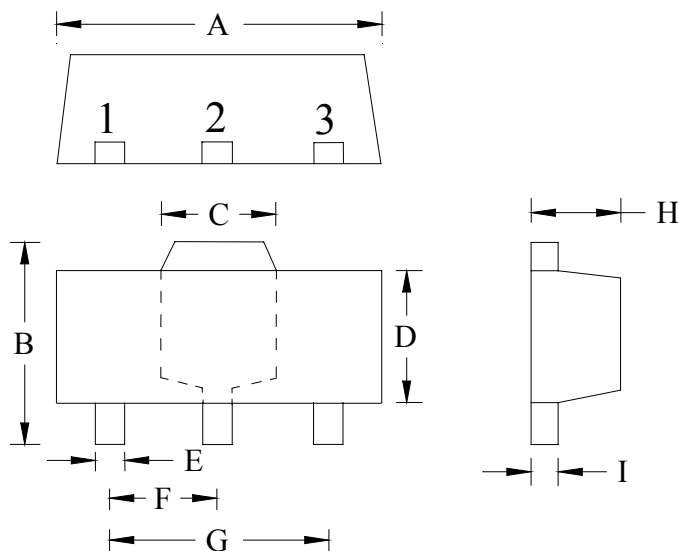


Notes:

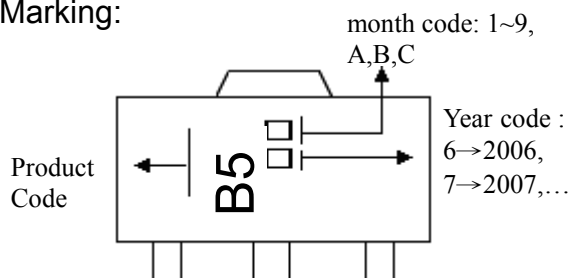
1. 10 sprocket hole pitch cumulative tolerance ± 0.2 .
2. Camber not to exceed 1mm in 100mm.
3. Material: Conductive Black Advantek Polystyrene.
4. A_0 & B_0 measured on a plane 0.3mm above the bottom of the pocket.
5. K_0 measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

Unit : millimeter

SOT-89 Dimension



Marking:



Style: Pin 1. Base 2. Collector 3. Emitter

3-Lead SOT-89 Plastic
Surface Mounted Package

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1732	0.1811	4.40	4.60	F	0.0591	TYP	1.50	TYP
B	0.1551	0.1673	3.94	4.25	G	0.1181	TYP	3.00	TYP
C	0.0610	REF	1.55	REF	H	0.0551	0.0630	1.40	1.60
D	0.0906	0.1024	2.30	2.60	I	0.0138	0.0173	0.35	0.44
E	0.0126	0.0205	0.32	0.52					