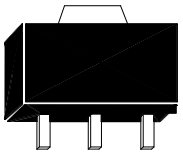
Low Vcesat NPN Epitaxial Planar Transistor

Features:

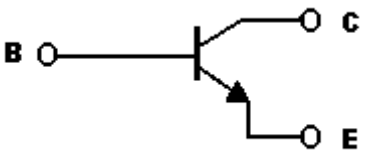
- Low V_{CE}(sat), V_{CE}(sat)=0.1 V (typical), at I_C / I_B = 1A / 50mA
- Excellent current gain characteristics
- Complementary to KMB1424A
- Pb-free lead plating package

SOT-89



B C E

BV_{CEO}	50V
I_C	3A
$R_{CE(SAT)}$ typ.	125mΩ



B：Base
C：Collector
E：Emitter

Ordering Information

Device	Package	Shipping
KMD2150A	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}	80	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	3	A
Collector Current (pulse)	I_{CP}	7	A
Power Dissipation	Pd	0.6	W
		1 *1	
		2 *2	
Operating Junction Temperature Range	Tj	-55~+150	°C
Storage Temperature Range	Tstg	-55~+150	°C

Note : *1 Printed circuit board, 1.7mm thick, collector copper plating 10mm*10mm.
*2 When mounted on a 40*40*0.7mm ceramic board.

Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	80	-	-	V	I_C=50μA, I_E=0
BV_{CEO}	50	-	-	V	I_C=1mA, I_B=0
BV_{EBO}	6	-	-	V	I_E=50μA, I_C=0
I_{CBO}	-	-	0.1	μA	V_{CB}=60V, I_E=0
I_{EBO}	-	-	0.1	μA	V_{EB}=5V, I_C=0
*$V_{CE(sat)}$	-	0.1	0.25	V	I_C=1A, I_B=50mA
*$V_{CE(sat)}$	-	0.25	0.5	V	I_C=2A, I_B=0.2A
*$R_{CE(sat)}$	-	0.125	0.25	Ω	I_C=2A, I_B=0.2A
*$V_{BE(sat)}$	0.8	1	1.5	V	I_C=2A, I_B=0.2A
*$h_{FE}1$	180	-	-	-	V_{CE}=2V, I_C=0.1A
*$h_{FE}2$	180	-	820	-	V_{CE}=2V, I_C=0.5A
*$h_{FE}3$	100	-	-	-	V_{CE}=2V, I_C=1A
f_T	-	90	-	MHz	V_{CE}=5V, I_C=0.1A, f =100MHz
Cob	-	45	-	pF	V_{CB}=10V, f=1MHz

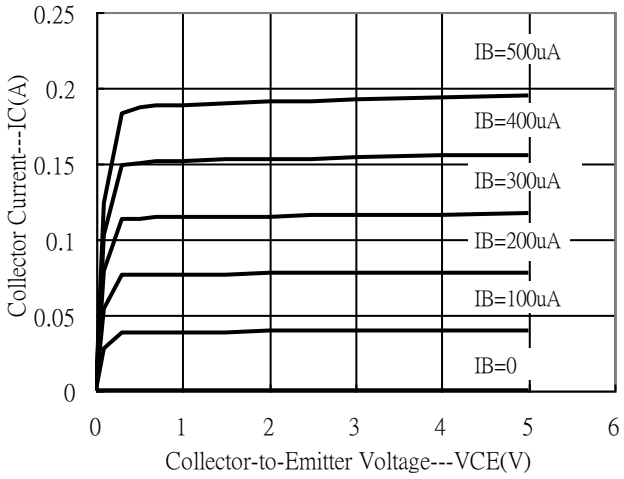
*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

Classification Of h_{FE} 2

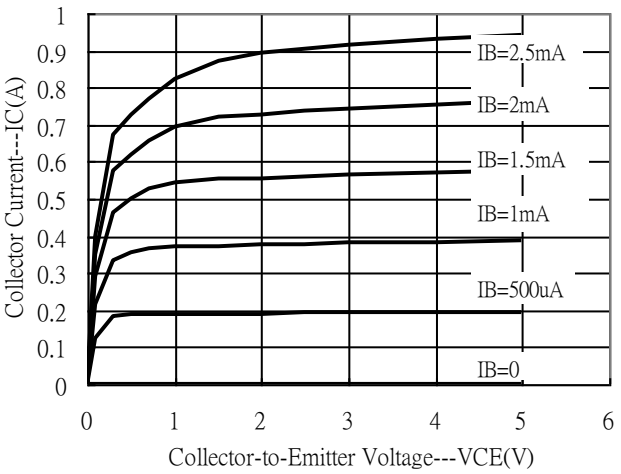
Rank	R	S	T
Range	180~390	270~560	390~820

Typical Characteristics

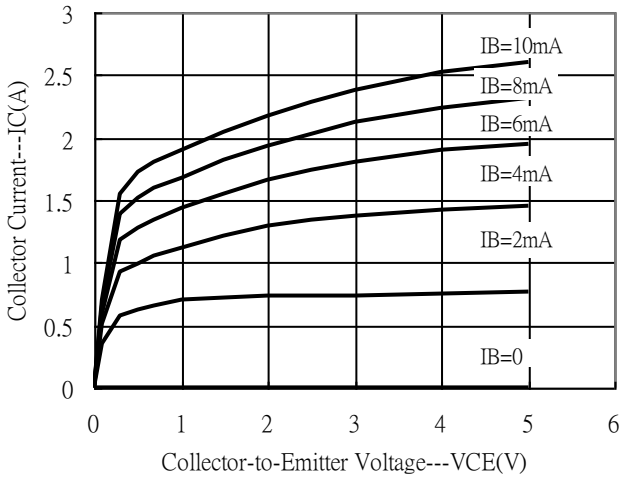
Emitter Grounded Output Characteristics



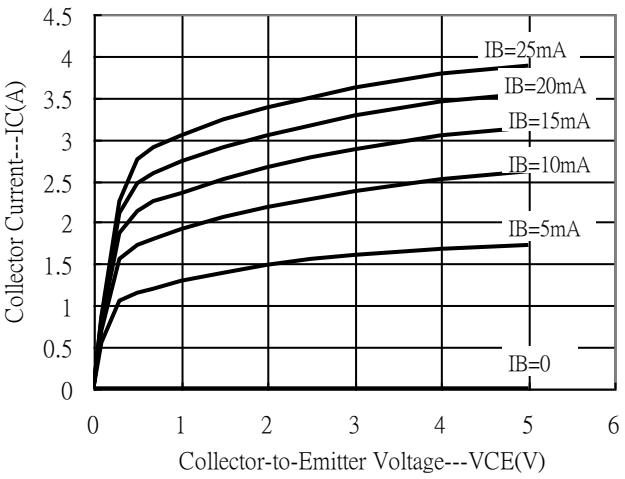
Emitter Grounded Output Characteristics



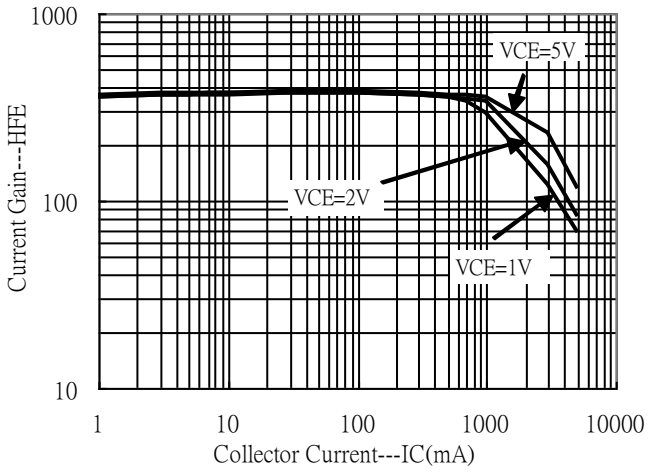
Emitter Grounded Output Characteristics



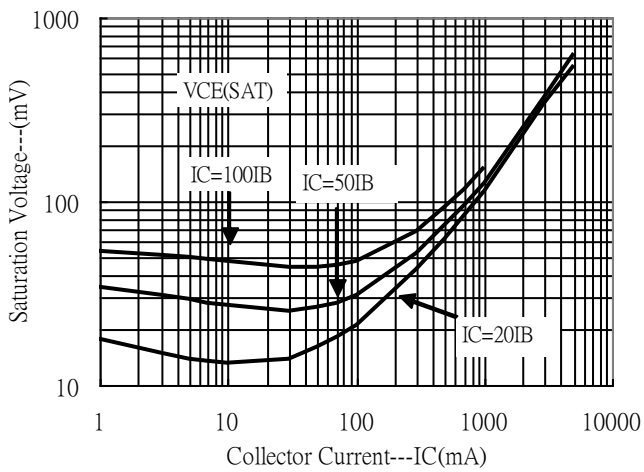
Emitter Grounded Output Characteristics



Current Gain vs Collector Current

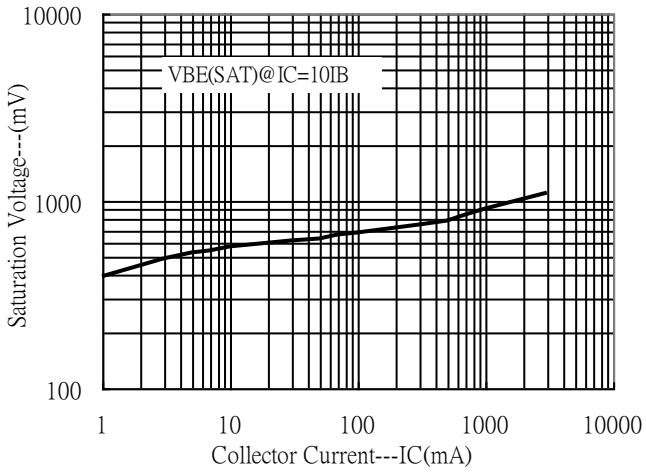


Saturation Voltage vs Collector Current

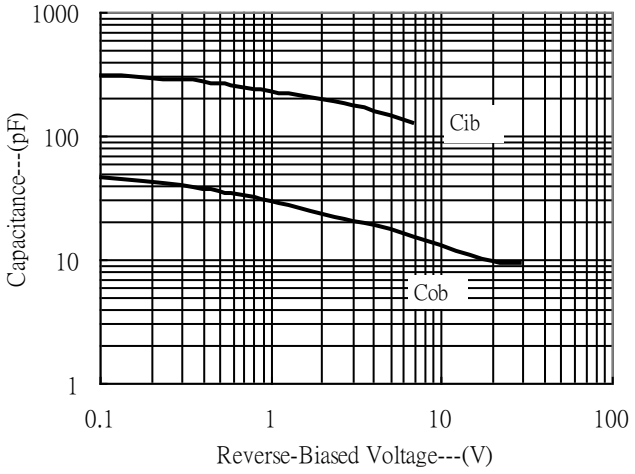


Typical Characteristics(Cont.)

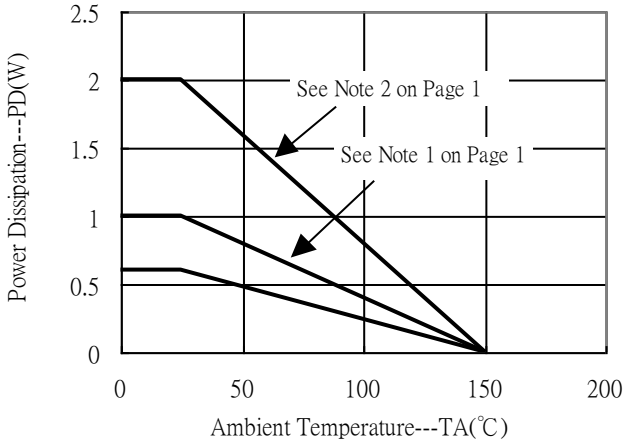
Saturation Voltage vs Collector Current



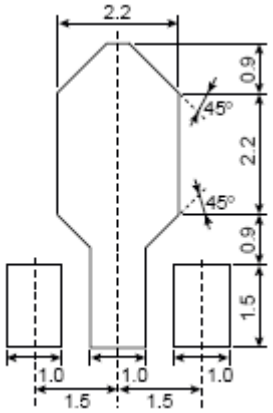
Capacitance vs Reverse-Biased Voltage



Power Derating Curves

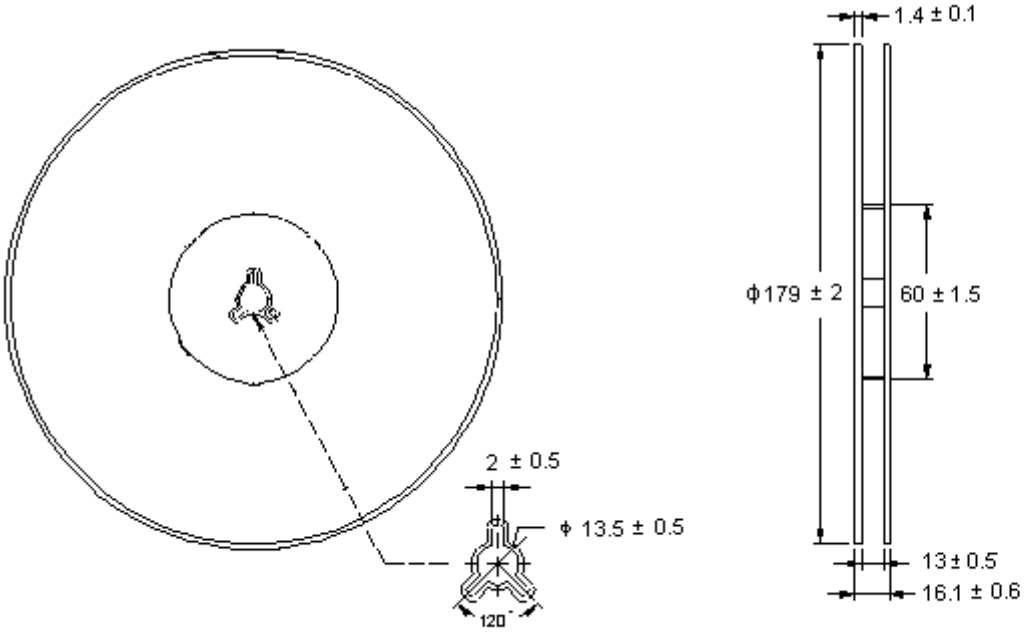


Recommended soldering footprint



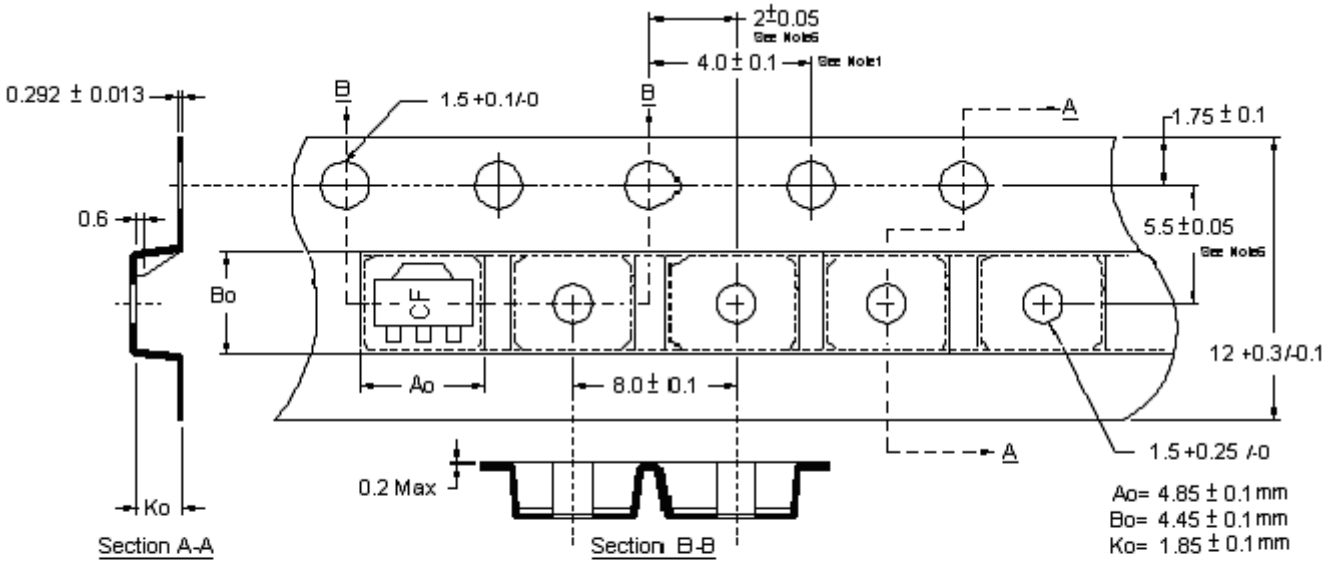
unit : mm

Reel Dimension



Unit: millimeter

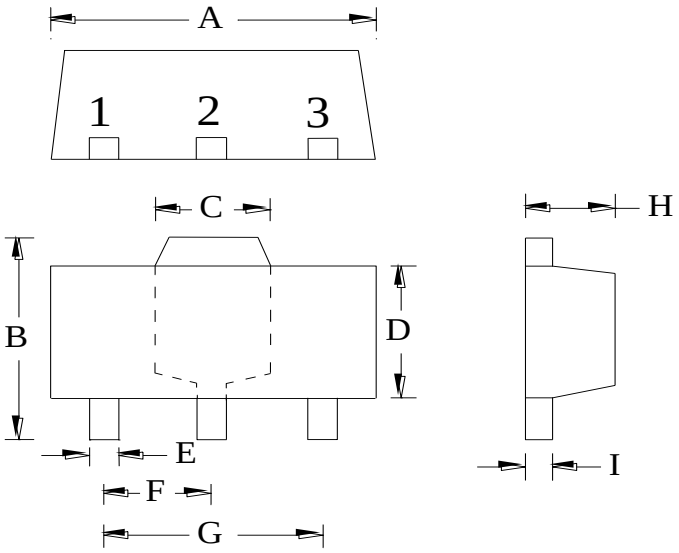
Carrier Tape Dimension



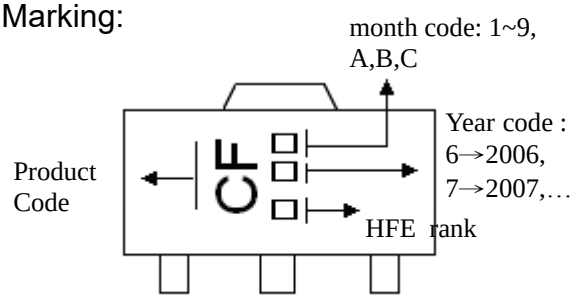
Notes:
1. 10 sprocket hole pitch cumulative tolerace ±0.2.
2. Camber not to exceed 1mm in 100mm.
3. Material: Conductive Black Advantek Polystyrene.
4. Ao & Bo measured on a plane 0.3mm above the bottom of the pocket.
5. Ko measured from a plane on the inside bottom of the pocket to the top surface of 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					