

SOT-89-3L Plastic-Encapsulate Transistors

TRANSISTOR (PNP)

Features:

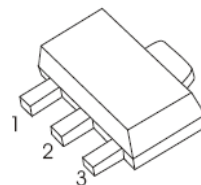
- NPN Complements to KMBCX54, KMBCX55, KMBCX56
- Low Voltage
- High Current

Applications:

- Medium Power General Purposes
- Driver Stages of Audio Amplifiers

SOT-89-3L

1. BASE
 2. COLLECTOR
 3. EMITTER



MARKING:

TYPE	KMBCX51	KMBCX51-10	KMBCX51-16
Marking	AA	AC	AD

TYPE	KMBCX52	KMBCX52-10	KMBCX52-16
Marking	AE	AG	AM

TYPE	KMBCX53	KMKMBCX53-10	KMBCX53-16
Marking	AH	AK	AL

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter		Value	Unit
V_{CBO}	Collector-Base Voltage	KMBCX51	-45	V
		KMBCX52	-60	
		KMBCX53	-100	
V_{CEO}	Collector-Emitter Voltage	KMBCX51	-45	V
		KMBCX52	-60	
		KMBCX53	-80	
V_{EBO}	Emitter-Base Voltage		-5	V
I_C	Collector Current		-1	A
P_C	Collector Power Dissipation		500	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient		250	$^{\circ}\text{C}/\text{W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range		-55~+150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

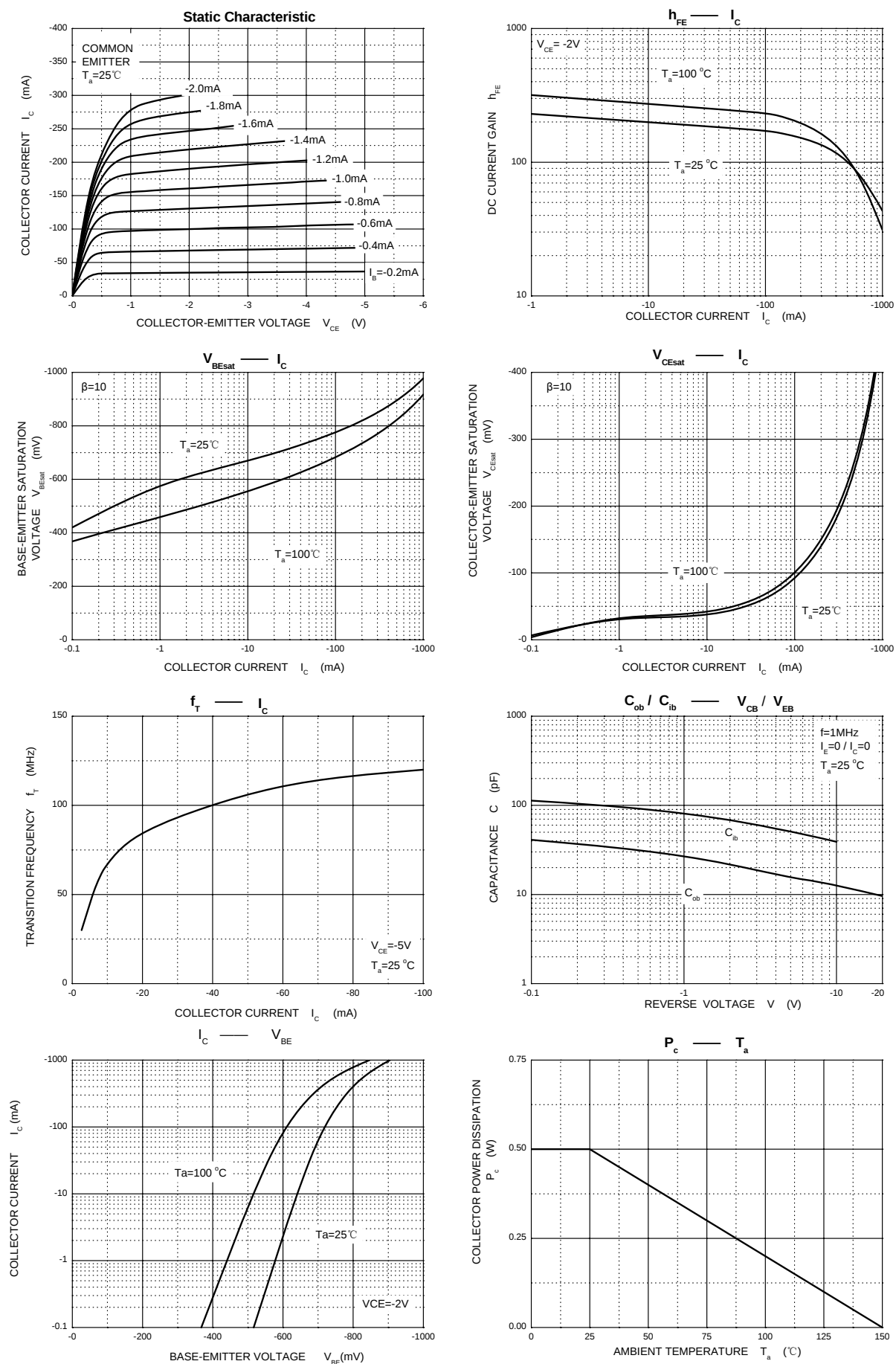
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-100\mu\text{A}, I_E=0$	KMBCX51	-45		V
			KMBCX52	-60		
			KMBCX53	-100		
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	$I_C=-10\text{mA}, I_B=0$	KMBCX51	-45		V
			KMBCX52	-60		
			KMBCX53	-80		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-100\mu\text{A}, I_C=0$		-5		V
Collector cut-off current	I_{CBO}	$V_{CB}=-30\text{V}, I_E=0$			-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=-5\text{V}, I_C=0$			-0.1	μA
DC current gain	$h_{FE(1)}^*$	$V_{CE}=-2\text{V}, I_C=-5\text{mA}$	63			
	$h_{FE(2)}^*$	$V_{CE}=-2\text{V}, I_C=-150\text{mA}$	63		250	
	$h_{FE(3)}^*$	$V_{CE}=-2\text{V}, I_C=-0.5\text{A}$	40			
Collector-emitter saturation voltage	$V_{CE(sat)}^*$	$I_C=-0.5\text{A}, I_B=-50\text{mA}$			-0.5	V
Base -emitter voltage	V_{BE}^*	$V_{CE}=-2\text{V}, I_C=-0.5\text{A}$			-1	V
Transition frequency	f_T	$V_{CE}=-5\text{V}, I_C=-10\text{mA}, f=100\text{MHz}$		50		MHz

* Pulse Test

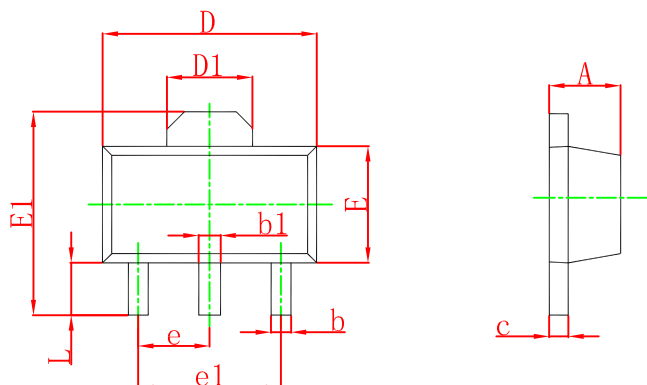
CLASSIFICATION OF $h_{FE(2)}$

RANK	KMBCX51 KMBCX52 KMBCX53	KMBCX51-10 KMBCX52-10 KMBCX53-10	KMBCX51-16 KMBCX52-16 KMBCX53-16
RANGE	63-250	63-160	100-250

Typical Characteristics

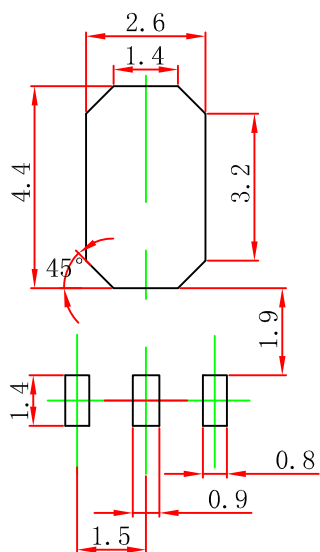


SOT-89-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

SOT-89-3L Suggested Pad Layout

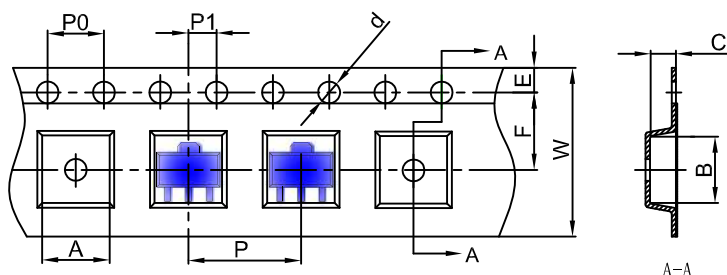


Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

SOT-89-3L Tape and Reel

SOT-89-3L Embossed Carrier Tape

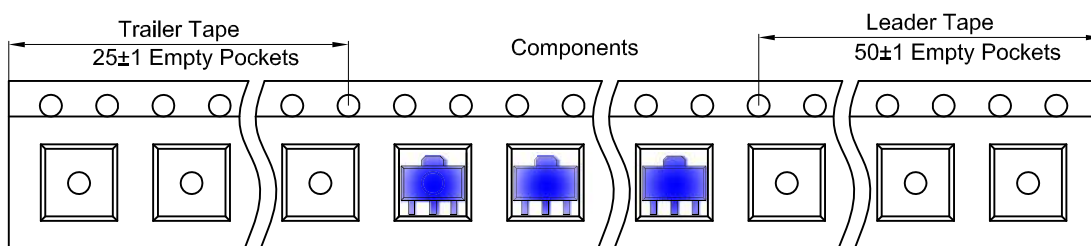


Packaging Description:

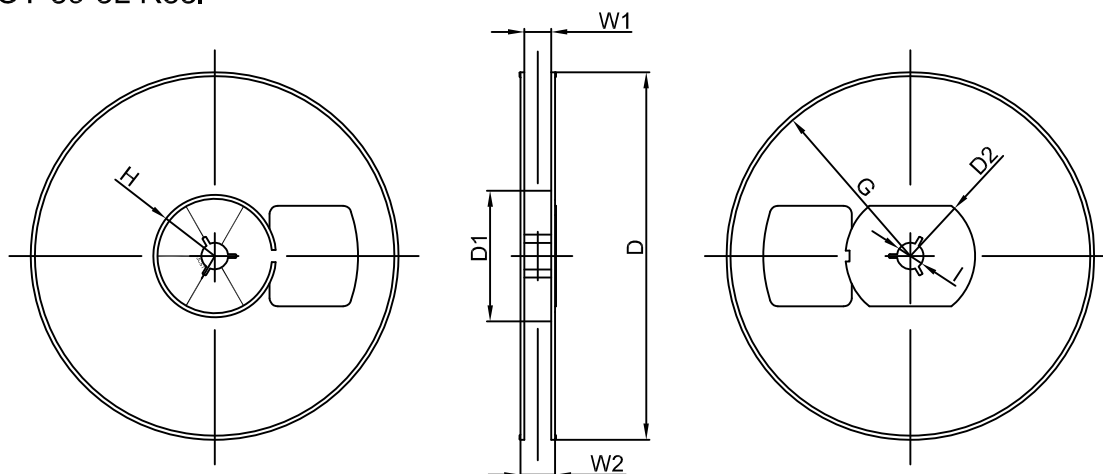
SOT-89-3L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 1,000 units per 7" or 18.0 cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-89-3L	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

SOT-89-3L Tape Leader and Trailer



SOT-89-3L Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø180.00	60.00	R32.00	R86.50	R30.00	Ø13.00	13.20	16.50

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
1000 pcs	7 inch	10,000 pcs	203×203×195	40,000 pcs	438×438×220	