DRAFT

AT-BCX54WN BCX55WN BCX56WN

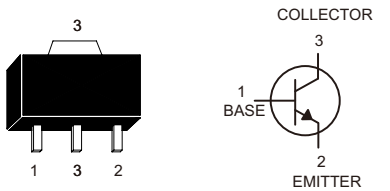
NPN TRANSISTOR

FEATURES

- Low current
- Low voltage
- Qualified to AEC-Q101 Standards for High Reliability

PINNING

PIN	DESCRIPTION
1	BASE
2	EMITTER
3	COLLECTOR



Simplified outline SOT-89-3L and symbol

Automotive Grade

CLASSIFICATION OF $h_{FE(1)}$

Rank	All	10	16
Range	63-250	63-160	100-250

MAXIMUM RATINGS (Ta =25°C unless otherwise noted)

Parameter		Symbol	Value	Unit
Collector– Base Voltage	BCX54WN	V_{CBO}	45	V
	BCX55WN		60	
	BCX56WN		100	
Collector– Emitter Voltage	BCX54WN	V_{CEO}	45	V
	BCX55WN		60	
	BCX56WN		80	
Emitter– Base Voltage		V_{EBO}	5	V
Collector Current — Continuous		I_C	1	A
Collector Power Dissipation		P_C	0.5	W
Thermal Resistance From JunctionTo Ambient		R_{thJA}	250	°C/W
Operation Junction and Storage Temperature Range		T_J , T_{stg}	-55~ +150	°C

ELECTRICAL CHARACTERISTICS (TA= 25°C unless otherwise noted.)

Parameter	Symbol	Test conditions		Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C = 100uA , I_E = 0	BCX54WN	45			V
			BCX55WN	60			
			BCX56WN	100			
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C = 10mA , I_B = 0	BCX54WN	45			V
			BCX55WN	60			
			BCX56WN	80			
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E = 100uA , I_C = 0		5			V
Collector cut-off current	I_{CBO}	V_{CB} = 30V, I_E = 0				0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB} = 5V, I_C =0				0.1	uA
DC current gain	h_{FE}	V_{CE} = 2V, I_C = 5mA		40			
		V_{CE} = 2V, I_C = 150mA		63		250	
		V_{CE} = 2V, I_C = 0.5A		25			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 0.5A , I_B = 50mA				0.5	V
Base-emitter voltage	$V_{BE(ON)}$	V_{CE} = 2V , I_C = 0.5A				1	V
Transition frequency	f_T	V_{CE} = 5V, I_C = 10mA , f=100MHz			130		MHZ

TYPICAL CHARACTERICS

Fig 1. Static Characteristic

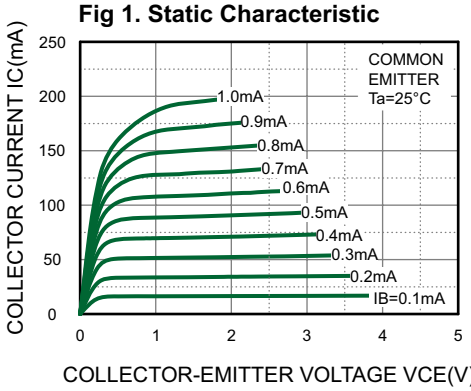


Fig 2. h_{FE} —— I_C

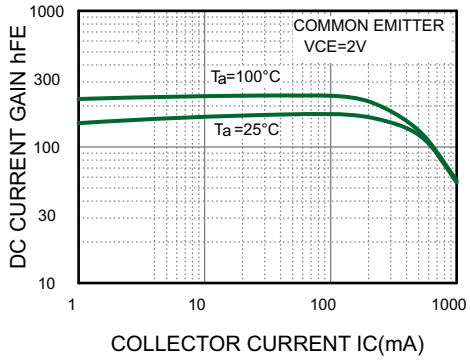


Fig 3. V_{CEsat} —— I_C

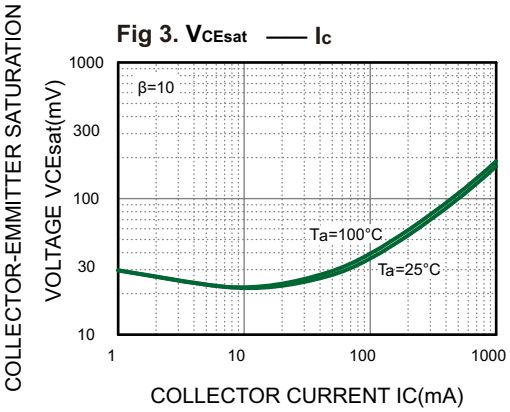


Fig 4. V_{BEsat} —— I_C

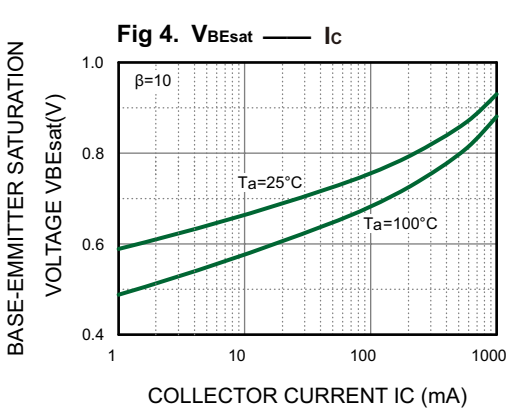


Fig 5. I_C —— V_{BE}

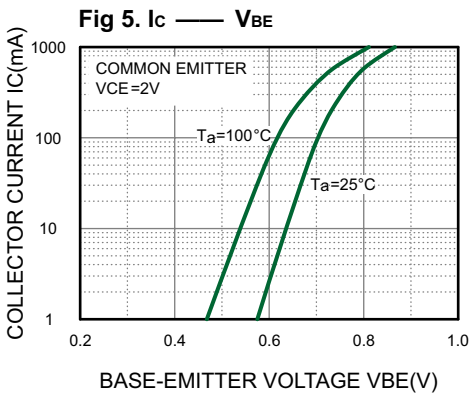


Fig 6. C_{ob}/ C_{ib} —— V_{CB} / V_{EB}

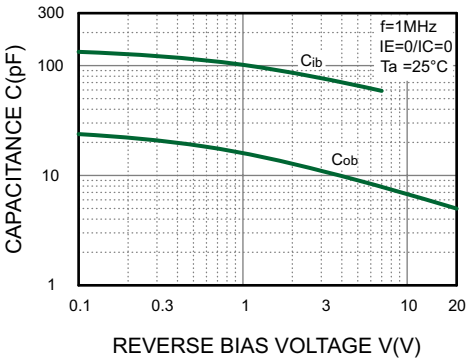


Fig 7. f_T —— I_C

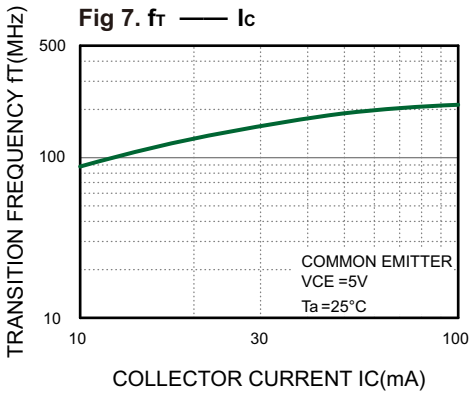
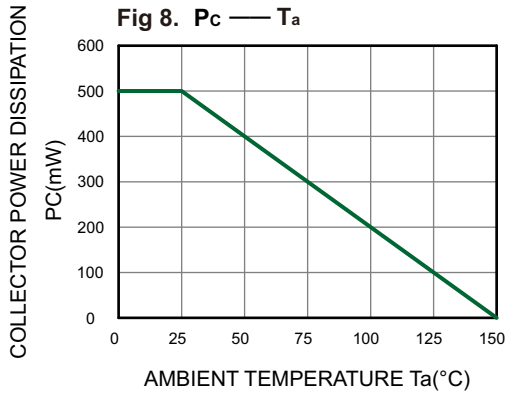
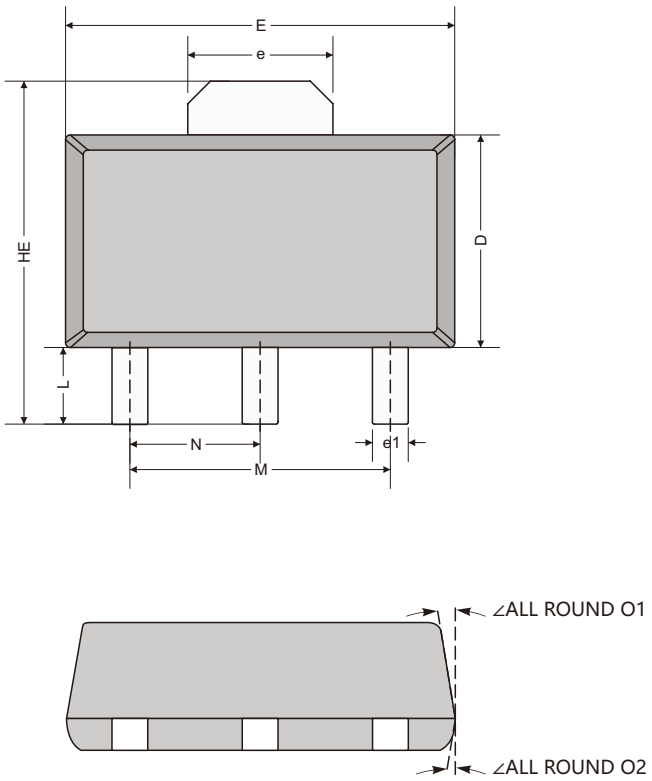


Fig 8. P_C —— T_a



SOT-89-3L Package Outline Dimensions



SOT-89-3L mechanical data

UNIT		A	C	D	e	e1	E	HE	L	M	N	O1	O2
mm	MAX	1.60	0.44	2.60	1.83	0.48	4.60	4.25	1.05	3.00 REF	1.50 REF	9~11°	4~6°
	MIN	1.40	0.35	2.29	1.62	0.36	4.40	3.94	0.75				
mil	MAX	62.99	17.32	102.36	72.05	18.90	181.10	167.32	41.34	118.11 REF	59.06 REF		
	MIN	55.12	13.78	90.16	63.78	14.17	173.23	155.12	29.53				

Marking

Type number	Marking code
BCX54WN	BA
BCX54WN10	BC
BCX54WN16	BD
BCX55WN	BE
BCX55WN10	BF
BCX55WN16	BG
BCX56WN	BH
BCX56WN10	BL
BCX56WN16	BJ

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