



## Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Collector-Emitter voltage:  $V_{CE0}=50V$
- Collector current up to 150mA
- High hFE linearity
- Complimentary to MMBT1015
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking:HF

## Maximum Ratings

- Junction Temperature:  $-55^{\circ}C$  to  $+125^{\circ}C$
- Storage Temperature:  $-55^{\circ}C$  to  $+150^{\circ}C$

### ABSOLUTE MAXIMUM RATINGS $T_a= 25^{\circ}C$ Unless Otherwise Specified

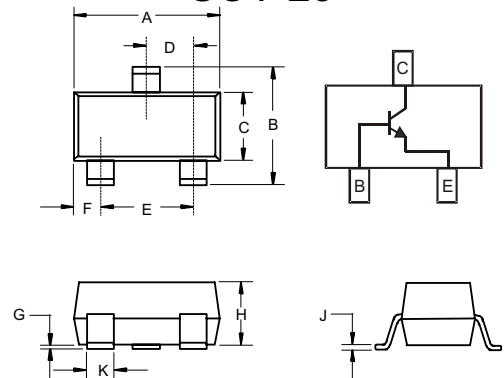
PARAMETERS	SYMBOL	VALUE	UNIT
Collector-base voltage	$V_{CBO}$	60	V
Collector-emitter voltage	$V_{CEO}$	50	V
Emitter-base voltage	$V_{EBO}$	5	V
Collector dissipation	$P_C$	200	mW
Collector current	$I_C$	150	mA
Base Current	$I_B$	50	mA

**MMBT1815-L**

**MMBT1815-H**

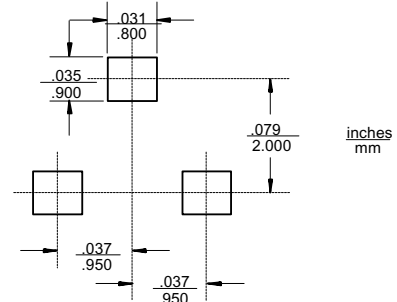
**NPN EPITAXIAL  
SILICON TRANSISTOR**

### SOT-23



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.098	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

### Suggested Solder Pad Layout



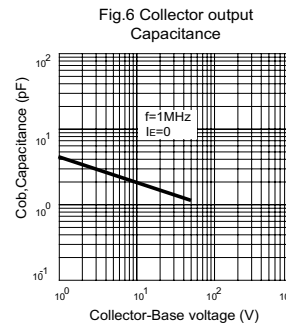
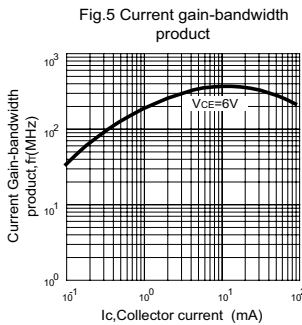
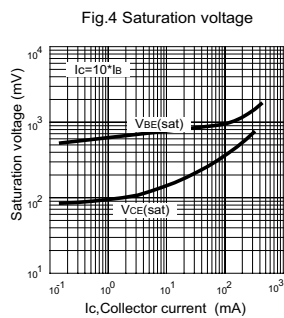
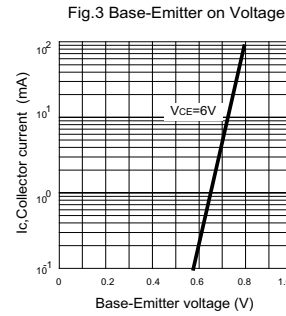
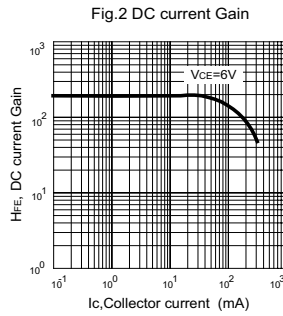
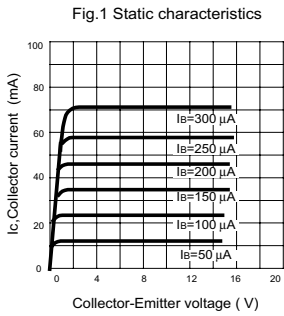
## ELECTRICAL CHARACTERISTICS $T_a = 25^\circ\text{C}$ Unless Otherwise Specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector cut-off current	$I_{CBO}$	$V_{CB}=60V, I_E=0$			100	nA
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5V, I_C=0$			100	nA
DC current gain (note)	$h_{FE1}$	$V_{CE}=6V, I_C=2mA$	130		400	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=100mA, I_B=10mA$		0.1	0.25	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=100mA, I_B=10mA$			1.0	V
Current gain bandwidth product	$f_T$	$V_{CE}=10V, I_C=1.0mA, f=30Hz$	80			MHz
Output capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$		2.0	3.0	pF
Noise Figure	NF	$I_C=0.1mA, V_{CE}=6V$ $R_G=10k\Omega, f=100Hz$		1.0	1.0	dB

## CLASSIFICATION OF $h_{FE1}$

RANK	L	H
RANGE	130-200	200-400

## TYPICAL CHARACTERISTIC CURVES





Micro Commercial Components

### Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel; 3Kpcs/Reel

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