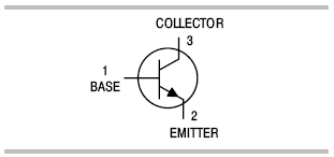
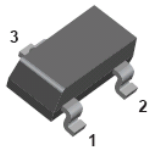
NPN General Purpose Transistor MMBTA05LT1/MMBTA06LT1

FEATURES

- High breakdown voltage.
- Complementary PNP type available (MMBTA55/MMBTA56).
- Low collector-emitter saturation voltage.





SOT-23

APPLICATIONS

- Ideal for medium power amplification and switching

ORDERING INFORMATION

Type No.	Marking	Package Code
MMBTA05LT1	1H	SOT-23
MMBTA06LT1	1GM	SOT-23

MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter		Value	UNIT
V_{CBO}	collector-base voltage	MMBTA05LT1	60	V
		MMBTA06LT1	80	
V_{CEO}	collector-emitter voltage	MMBTA05LT1	60	V
		MMBTA06LT1	80	
V_{EBO}	emitter-base voltage		4	V
I_C	collector current (DC)		0.5	A
P_C	Collector dissipation		0.35	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient		357	°C/W
T_j , T_{stg}	junction and storage temperature		-55-150	°C

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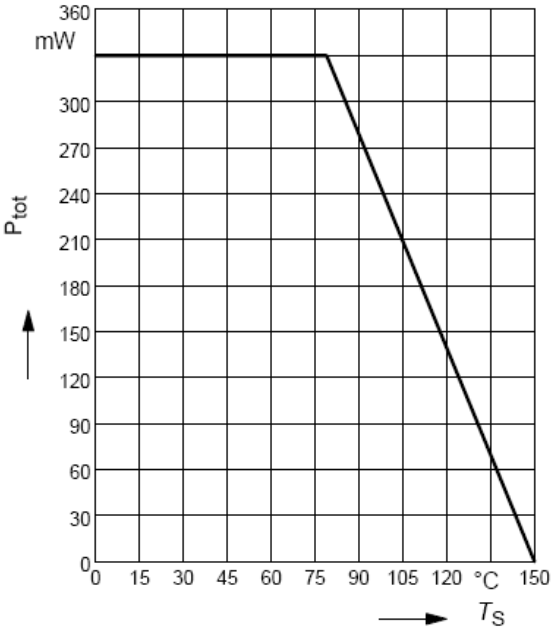
ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Symbol	Parameter	Test conditions	MIN.	MAX.	UNIT
$V_{(BR)CBO}$	Collector-base breakdown voltage MMBTA05LT1 MMBTA06LT1	I_C=100μA,I_E=0	 60 80		V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage MMBTA05LT1 MMBTA06LT1	I_C=1.0mA,I_B=0	 60 80		V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=10μA,I_C=0	4		V
I_{CBO}	Collector cut-off current MMBTA05LT1 MMBTA06LT1	I_E = 0; V_{CB} = 60V I_E = 0; V_{CB} = 80V	-	0.1	μA
I_{CEO}	Collector cut-off current MMBTA05LT1 MMBTA06LT1	I_B = 0; V_{CE} = 60V I_B= 0; V_{CE} = 60V	-	0.1	μA
h_{FE}	DC current gain	V_{CE} = 1V; I_C= 10mA V_{CE} = 1V;I_C = 100mA	100 100	-	
$V_{CE(sat)}$	Collector-emitter saturation voltage	I_C = 100mA; I_B = 10mA	-	0.25	V
$V_{BE(ON)}$	Base-emitter voltage	I_C=100mA,V_{CE}=1.0V	-	1.2	V
f_T	Transition frequency	I_C = 20mA; V_{CE} = 5V; f = 20MHz	100	-	MHz

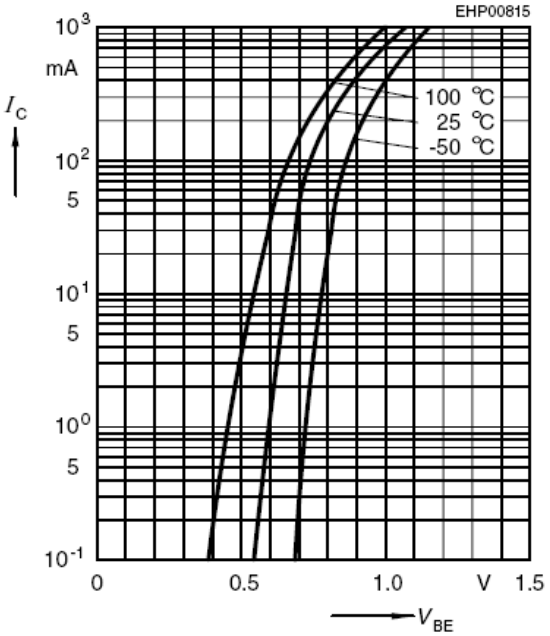
TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Total power dissipation $P_{tot} = f(T_S)$



Collector current $I_C = f(V_{BE})$

V_{CE} = 1V



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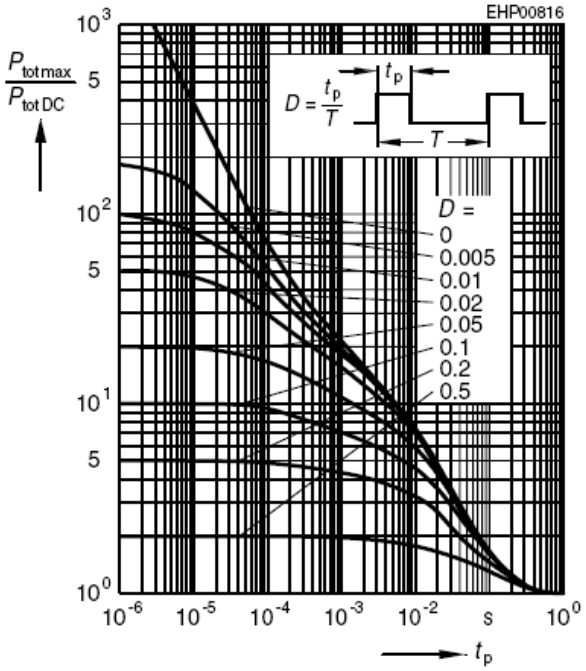
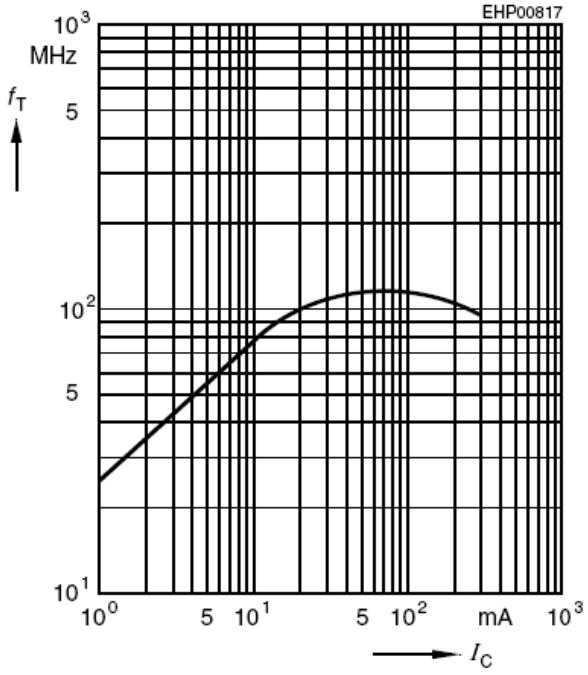
Permissible pulse load

$P_{totmax} / P_{totDC} = f(t_p)$



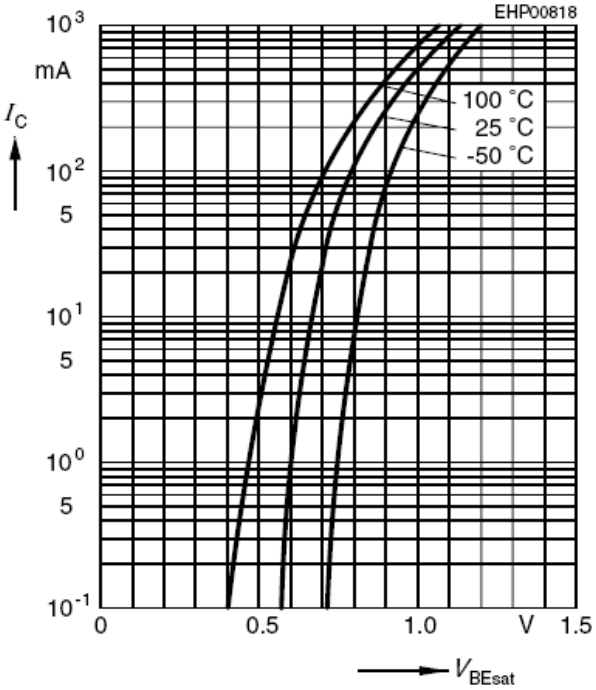
Transition frequency $f_T = f(I_C)$

$V_{CE} = 5V$



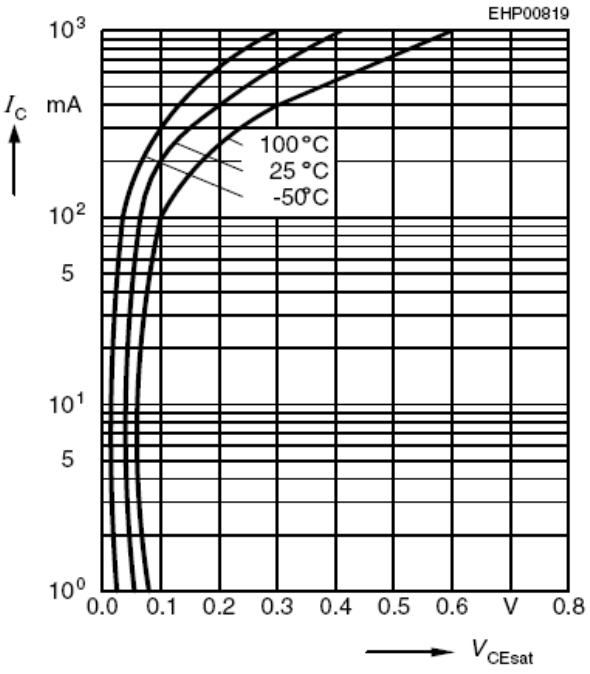
Base-emitter saturation voltage

$I_C = f(V_{BEsat})$, $h_{FE} = 10$



Collector-emitter saturation voltage

$I_C = f(V_{CEsat})$, $h_{FE} = 10$



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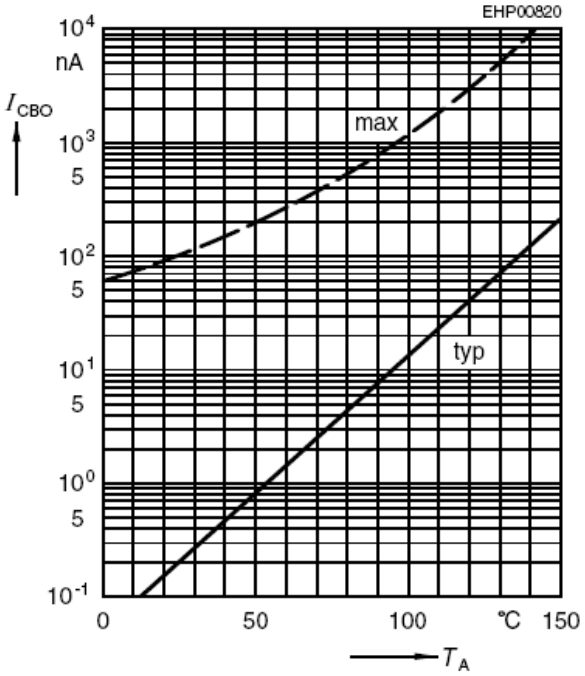
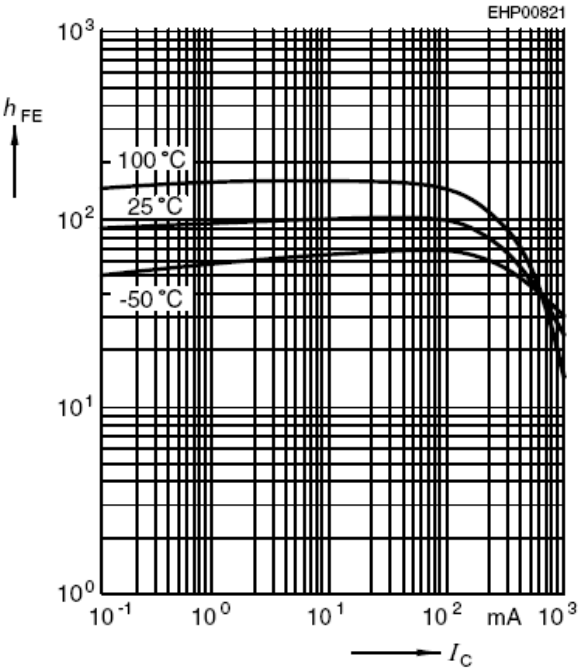
Collector cutoff current $I_{CBO} = f(T_A)$

V_{CB} = 80V



DC current gain $h_{FE} = f(I_C)$

V_{CE} = 1V



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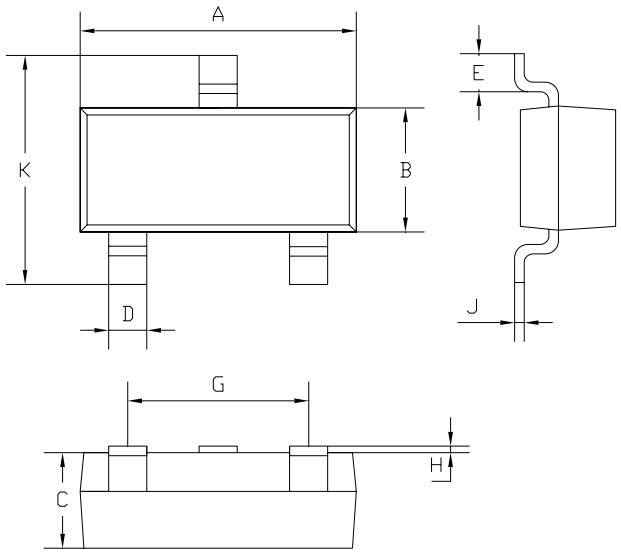
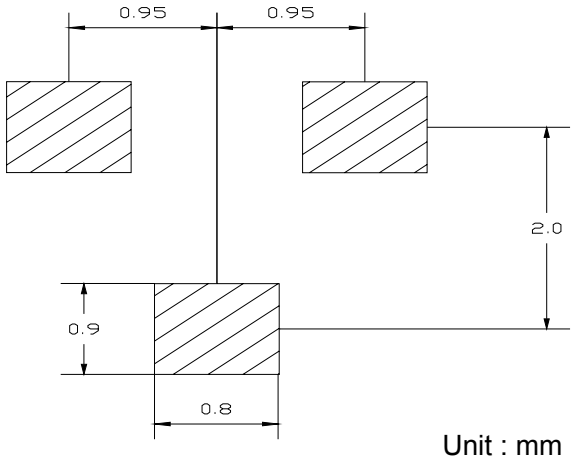
PACKAGE OUTLINE

Plastic surface mounted package SOT-23



SOT-23		
Dim	Min	Max
A	2.85	2.95
B	1.25	1.35
C	1.0 Typical	
D	0.4 Typical	
E	0.35	0.48
G	1.85	1.95
H	0.02	0.1
J	0.1 Typical	
K	2.35	2.45
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

Device	Package	Shipping
MMBTA05LT1/MMBTA06LT1	SOT-23	3000/Tape&Reel