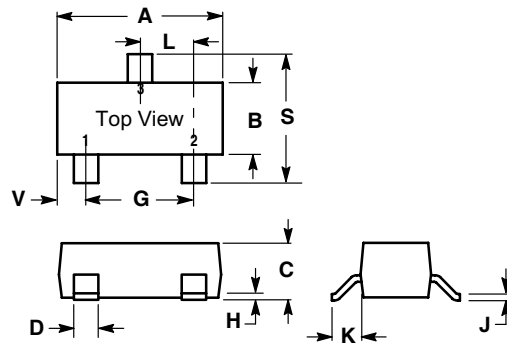
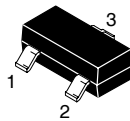
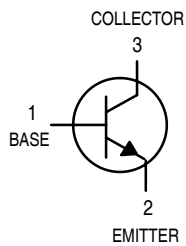


RoHS Compliant Product

A suffix of "-C" specifies halogen & lead-free

FEATURES

- Plastic-Encapsulate Transistors
- Power dissipation & Collector current
Pcm: 0.3W Icm: 0.3A
- High voltage V_(BR): 300V



SOT-23		
Dim	Min	Max
A	2.800	3.040
B	1.200	1.400
C	0.890	1.110
D	0.370	0.500
G	1.780	2.040
H	0.013	0.100
J	0.085	0.177
K	0.450	0.600
L	0.890	1.020
S	2.100	2.500
V	0.450	0.600
All Dimension in mm		

ELECTRICAL CHARACTERISTICS (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	V _{(BR)CBO}	I _C = 100 μA, I _E =0	300		V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C = 1 mA, I _B =0	300		V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E = 100 μA, I _C =0	5		V
Collector cut-off current	I _{CBO}	V _{CB} =200 V, I _E =0		0.25	μA
Emitter cut-off current	I _{EBO}	V _{EB} = 5V, I _C =0		0.1	μA
DC current gain	H _{FE (1)}	V _{CE} = 10V, I _C = 1mA	60		
	H _{FE (2)}	V _{CE} = 10V, I _C =10mA	100	200	
	H _{FE (3)}	V _{CE} =10V, I _C =30mA	60		
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =20 mA, I _B = 2mA		0.2	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C = 20 mA, I _B =2mA		0.9	V
Transition frequency	f _T	V _{CE} = 20V, I _C = 10mA f=30MHz	50		MHz

DEVICE MARKING

MMBTA42=1D

MMBTA42

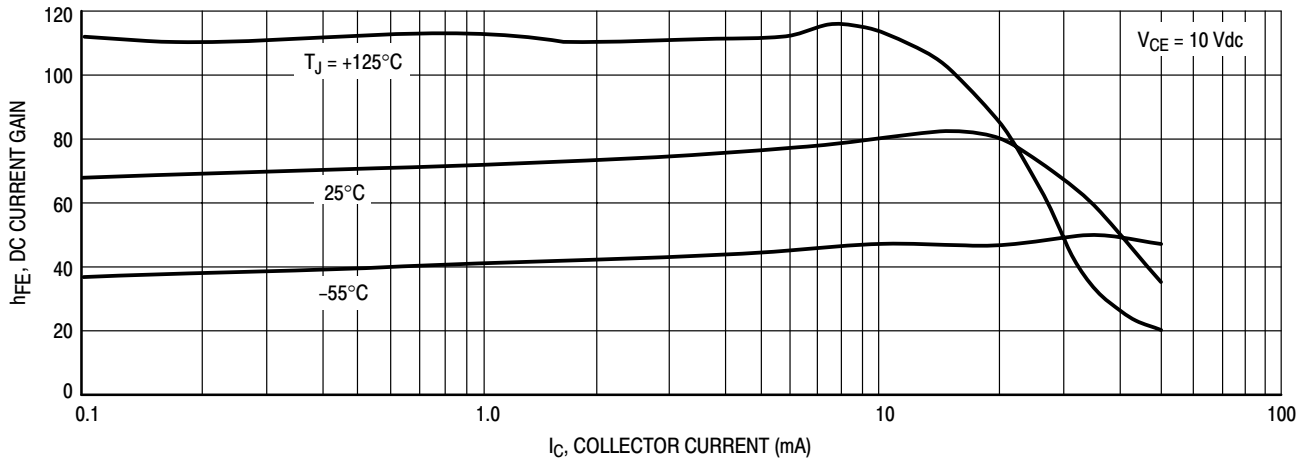


Figure 1. DC Current Gain

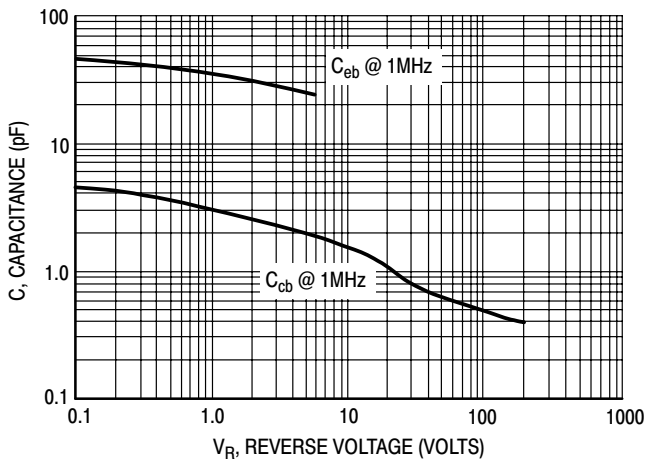


Figure 2. Capacitance

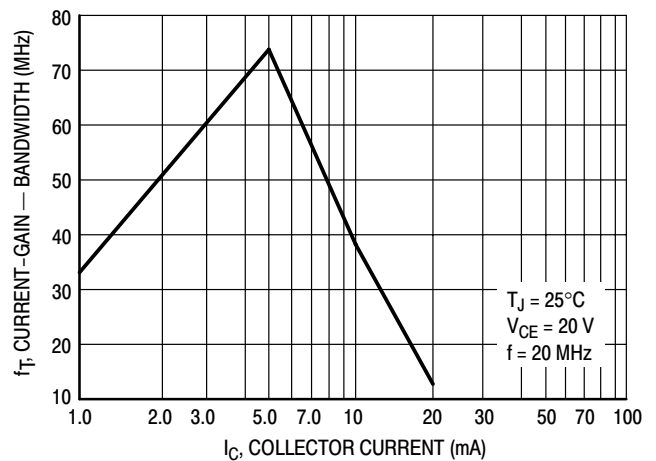


Figure 3. Current-Gain - Bandwidth

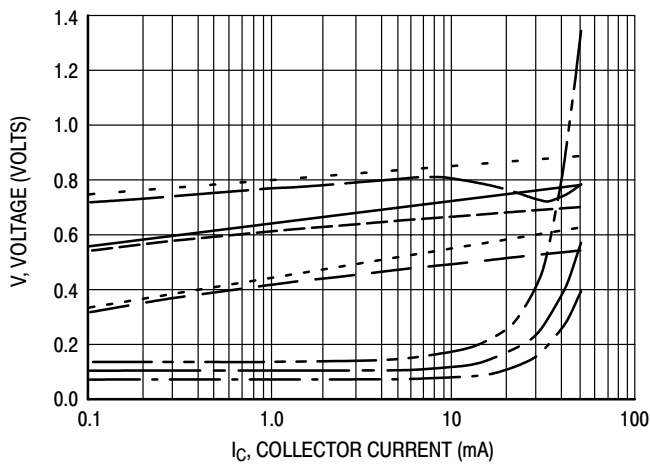


Figure 4. "ON" Voltages

- $V_{CE(sat)}$ @ 25°C, $I_C/I_B = 10$
- $V_{CE(sat)}$ @ 125°C, $I_C/I_B = 10$
- $V_{CE(sat)}$ @ -55°C, $I_C/I_B = 10$
- $V_{BE(sat)}$ @ 25°C, $I_C/I_B = 10$
- $V_{BE(sat)}$ @ 125°C, $I_C/I_B = 10$
- $V_{BE(sat)}$ @ -55°C, $I_C/I_B = 10$
- $V_{BE(on)}$ @ 25°C, $V_{CE} = 10$ V
- $V_{BE(on)}$ @ 125°C, $V_{CE} = 10$ V
- $V_{BE(on)}$ @ -55°C, $V_{CE} = 10$ V