

MMBTA13 / MMBTA14

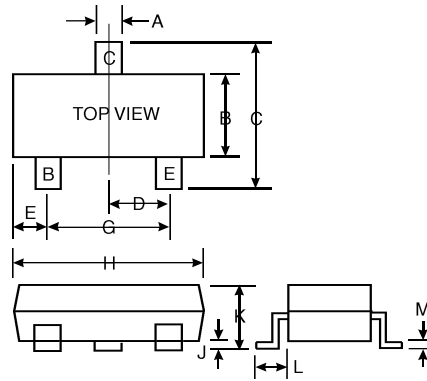
NPN SURFACE MOUNT DARLINGTON TRANSISTOR

Features

Epitaxial Planar Die Construction
Complementary PNP Types Available
(MMBTA63 / MMBTA64)
Ideal for Medium Power Amplification and
Switching
High Current Gain

Mechanical Data

Case: SOT-23, Molded Plastic
Terminals: Solderable per MIL-STD-202,
Method 208
Terminal Connections: See Diagram
MMBTA13 Marking: K2D, R1M
MMBTA14 Marking: K3D, R1N
Weight: 0.008 grams (approx.)



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.19	1.40
C	2.10	2.50
D	0.89	1.05
E	0.45	0.61
G	1.78	2.05
H	2.65	3.05
J	0.013	0.15
K	0.89	1.10
L	0.45	0.61
M	0.076	0.178
All Dimensions in mm		

Maximum Ratings @ T_A = 25 °C unless otherwise specified

Characteristic	Symbol	MMBTA13	MMBTA14	Unit
Collector-Base Voltage	V _{CBO}	30		V
Collector-Emitter Voltage	V _{CEO}	30		V
Emitter-Base Voltage	V _{EBO}	10		V
Collector Current - Continuous (Note 1)	I _C	300		mA
Power Dissipation (Note 1)	P _d	350		mW
Thermal Resistance, Junction to Ambient (Note 1)	R _{JA}	357		K/W
Operating and Storage and Temperature Range	T _J , T _{STG}	-55 to +150		°C

Electrical Characteristics @ T_A = 25 °C unless otherwise specified

Characteristic	Symbol	Min	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 2)					
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	30		V	I _C = 100 A V _{BE} = 0V
Collector Cutoff Current	I _{CBO}		100	nA	V _{CB} = 30V, I _E = 0
Emitter Cutoff Current	I _{EBO}		100	nA	V _{EB} = 10V, I _C = 0
ON CHARACTERISTICS (Note 2)					
DC Current Gain	MMBTA13 MMBTA14 MMBTA13 MMBTA14 h _{FE}	5,000 10,000 10,000 20,000			I _C = 10mA, V _{CE} = 5.0V I _C = 10mA, V _{CE} = 5.0V I _C = 100mA, V _{CE} = 5.0V I _C = 100mA, V _{CE} = 5.0V
Collector-Emitter Saturation Voltage	V _{CE(SAT)}		1.5	V	I _C = 100mA, I _B = 100 A
Base- Emitter Saturation Voltage	V _{BE(SAT)}		2.0	V	I _C = 100mA, V _{CE} = 5.0V
SMALL SIGNAL CHARACTERISTICS					
Output Capacitance	C _{obo}	8.0 Typical		pF	V _{CB} = 10V, f = 1.0MHz, I _E = 0
Input Capacitance	C _{ibo}	15 Typical		pF	V _{EB} = 0.5V, f = 1.0MHz, I _C = 0
Current Gain-Bandwidth Product	f _T	125		MHz	V _{CE} = 5.0V, I _C = 10mA, f = 100MHz

Note: 1. Valid provided that terminals are kept at ambient temperature.
2. Pulse test: Pulse width 300 s, duty cycle 2%.