

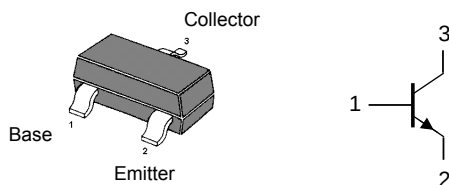
FEATURES

- Low collector-emitter saturation voltage
- High current capabilities
- Improved device reliability due to reduced heat generation.

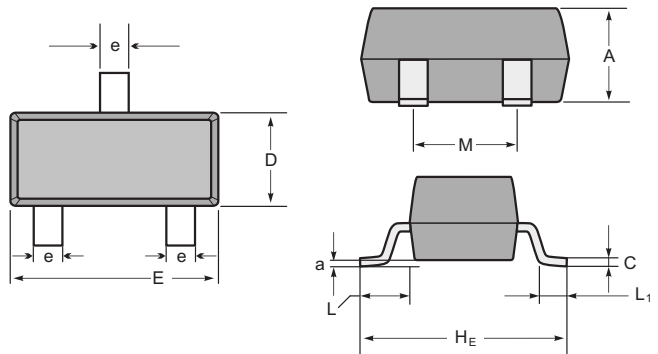
APPLICATIONS

- General purpose switching and muting
- LCD backlighting
- Supply line switching circuits
- Battery driven equipment (mobile phones, video cameras and hand-held devices).

Marking : Z T



SOT-23



SOT-23 mechanical data

UNIT		A	C	D	E	H _E	e	M	L	L ₁	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

Absolute Maximum Ratings (T_a = 25 °C)

Parameter		Symbol	Value	Unit
Collector Base Voltage		V _{CBO}	40	V
Collector Emitter Voltage		V _{CEO}	30	V
Emitter Base Voltage		V _{EBO}	5	V
Collector Current (DC)		I _C	1	A
Peak Collector Current		I _{CM}	2	A
Peak Base Current		I _{BM}	1	A
Total Power Dissipation	T _{amb} ≤ 25°C ¹⁾	P _{tot}	200	mW
	T _{amb} ≤ 25 °C ²⁾		450	
Junction Temperature		T _j	150	°C
Storage Temperature Range		T _S	-65 to +150	°C
Thermal Resistance From Junction to Ambient	In free air ¹⁾	R _{th j-a}	417	K/W
	In free air ²⁾		278	
Operating Ambient Temperature		T _{amb}	-65 to +150	°C

¹⁾ Device mounted on a printed-circuit board; single sided copper; tinplated; standard footprint.

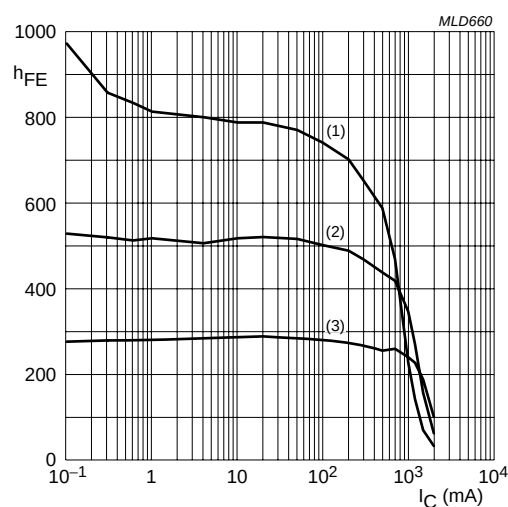
²⁾ Device mounted on a printed-circuit board; single sided copper; tinplated; mounting pad for collector 1cm².

PBSS4140T

Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain					
at $V_{CE}=5V$, $I_C=1mA$	h_{FE}	300	-	-	
at $V_{CE}=5V$, $I_C=500mA$	h_{FE}	300	-	900	
at $V_{CE}=5V$, $I_C=1A$	h_{FE}	200	-	-	
Collector-Base Cutoff Current					
at $V_{CB}=40V$	I_{CBO}	-	-	100	nA
at $V_{CB}=40V$, $T_{amb}=150\text{ }^{\circ}\text{C}$	I_{CBO}	-	-	50	μA
Collector-Emitter Cutoff Current					
at $V_{CE}=30V$	I_{CEO}	-	-	100	nA
Emitter-Base Cutoff Current					
at $V_{EB}=5V$	I_{EBO}	-	-	100	nA
Collector-Emitter Saturation Voltage					
at $I_C=100mA$, $I_B=1mA$	$V_{CE(sat)}$	-	-	200	mV
at $I_C=500mA$, $I_B=50mA$	$V_{CE(sat)}$	-	-	250	
at $I_C=1A$, $I_B=100mA$	$V_{CE(sat)}$	-	-	500	
Base-Emitter Saturation Voltage					
at $I_C=1A$, $I_B=100mA$	$V_{BE(sat)}$	-	-	1.2	V
Base-Emitter Turn-on Voltage					
at $V_{CE}=5V$, $I_C=1A$	$V_{BE(on)}$	-	-	1.1	V
Transition Frequency					
at $V_{CE}=10V$, $I_C=50mA$, $f=100MHz$	f_T	150	-	-	HMz
Collector Capacitance					
at $V_{CB}=10V$, $f=1MHz$	C_C	-	-	10	pF

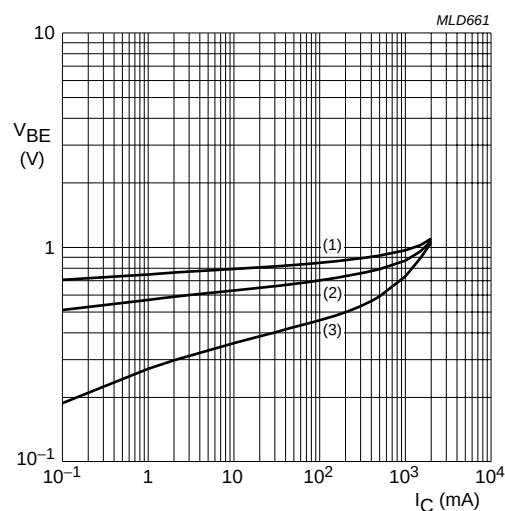
RATING AND CHARACTERISTIC CURVES (PBSS4140T)



$V_{CE} = 5 \text{ V.}$

- (1) $T_{amb} = 150 \text{ }^{\circ}\text{C.}$
- (2) $T_{amb} = 25 \text{ }^{\circ}\text{C.}$
- (3) $T_{amb} = -55 \text{ }^{\circ}\text{C.}$

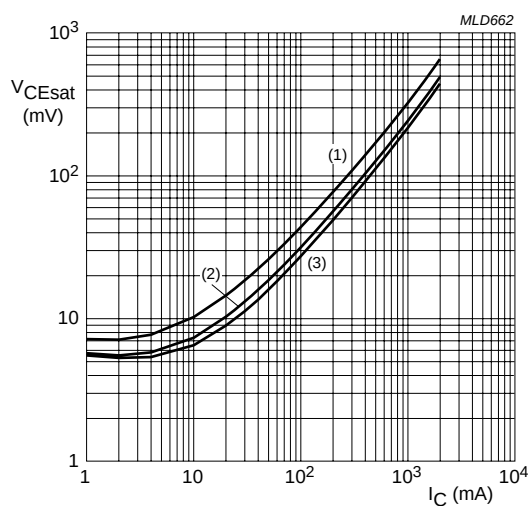
DC current gain as a function of collector current; typical values.



$V_{CE} = 5 \text{ V.}$

- (1) $T_{amb} = -55 \text{ }^{\circ}\text{C.}$
- (2) $T_{amb} = 25 \text{ }^{\circ}\text{C.}$
- (3) $T_{amb} = 150 \text{ }^{\circ}\text{C.}$

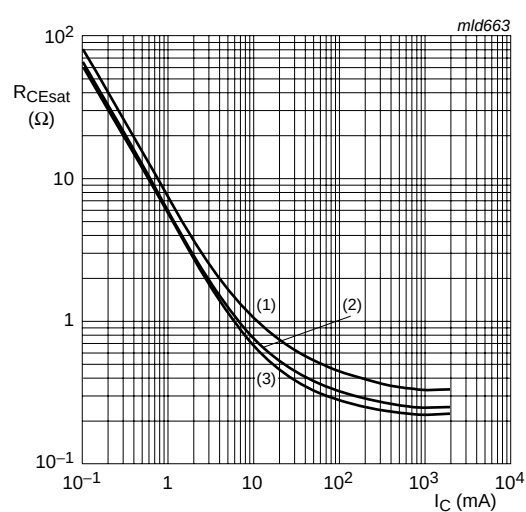
Base-emitter voltage as a function of collector current; typical values.



$I_C/I_B = 10.$

- (1) $T_{amb} = 150 \text{ }^{\circ}\text{C.}$
- (2) $T_{amb} = 25 \text{ }^{\circ}\text{C.}$
- (3) $T_{amb} = -55 \text{ }^{\circ}\text{C.}$

Collector-emitter saturation voltage as a function of collector current; typical values.



$I_C/I_B = 10.$

- (1) $T_{amb} = 150 \text{ }^{\circ}\text{C.}$
- (2) $T_{amb} = 25 \text{ }^{\circ}\text{C.}$
- (3) $T_{amb} = -55 \text{ }^{\circ}\text{C.}$

Equivalent on-resistance as a function of collector current; typical values.