

Descriptions

- Silicon PNP transistor in a SOT-23 Plastic Package.

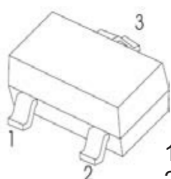
Features

- Low $V_{CE(sat)}$, high current.

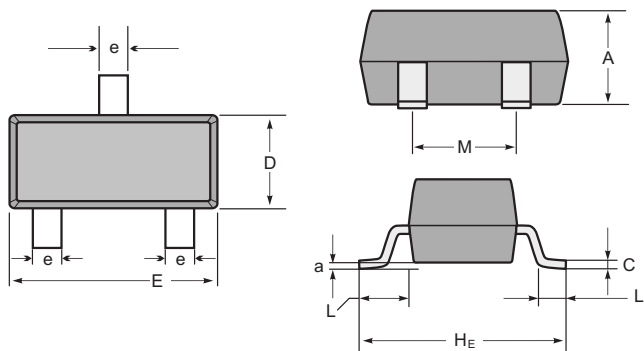
Applications

- Supply line switching circuits
- Battery management applications
- DC/DC converter applications
- Strobe flash units
- Heavy duty battery powered equipment (motor and lamp drivers).

Marking : ZF



1.BASE
2.EMITTER
3.COLLECTOR



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(Ta=25°C)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	-40	V
Collector to Emitter Voltage	V_{CEO}	-40	V
Emitter to Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-2	A
Peak Collector Current	I_{CM}	-3	A
Base Current	I_B	-0.3	A
Total Power Dissipation	$P_{tot(注 1)}$	300	mW
Total Power Dissipation	$P_{tot(注 2)}$	0.48	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-65 ~ 150	°C

Notes

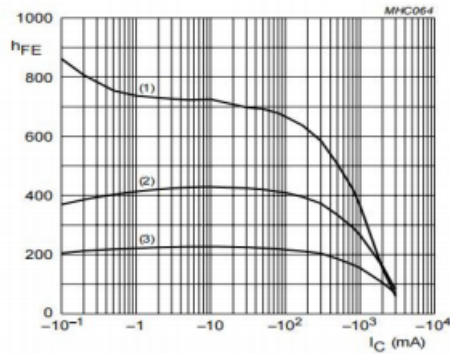
- 1.Device mounted on a printed-circuit board, single sided copper, tin plated, standard footprint.
- 2.Device mounted on a printed-circuit board, single sided copper, tin plated, mounting pad for collector 1cm2.

PBSS5240

Electrical Characteristics(Ta=25°C)

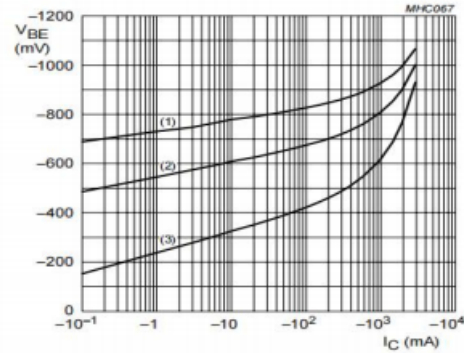
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-30V$ $I_E=0$			-100	nA
		$V_{CB}=-30V$ $I_E=0$ $T_j=150^{\circ}C$			-50	uA
emitter Cut-Off Current	I_{EBO}	$V_{EB}=-4.0V$ $I_C=0$			-100	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=-2.0V$ $I_C=-100mA$	300			
	$h_{FE(2)}$	$V_{CE}=-2.0V$ $I_C=-500mA$	260			
	$h_{FE(3)*}$	$V_{CE}=-2.0V$ $I_C=-1.0A$	210			
	$h_{FE(4)*}$	$V_{CE}=-2.0V$ $I_C=-2.0A$	100			
Collector-Emitter Saturation Voltage	$V_{CE(sat)(1)*}$	$I_C=-100mA$ $I_B=-1mA$			-100	mV
	$V_{CE(sat)(2)*}$	$I_C=-500mA$ $I_B=-50mA$			-110	mV
	$V_{CE(sat)(3)*}$	$I_C=-750mA$ $I_B=-15mA$			-225	mV
	$V_{CE(sat)(4)*}$	$I_C=-1A$ $I_B=-50mA$			-225	mV
	$V_{CE(sat)(5)*}$	$I_C=-2A$ $I_B=-200mA$			-350	mV
Equivalent On-Resistance	$R_{CE(sat)*}$	$I_C=-0.5A$ $I_B=-50mA$		160	220	mQ
Base-Emitter Saturation Voltage	$V_{BE(sat)*}$	$I_C=-2.0A$ $I_B=-200mA$			-1.1	V
Base-Emitter Voltage	$V_{BE(ON)*}$	$V_{CE}=-2.0V$ $I_C=-0.1A$			-0.75	V
Transition Frequency	f_T	$V_{CE}=-10V$ $I_C=-100mA$ $f=100MHz$	100			MHz
Collector Capacitance	C_C	$V_{CB}=-10V$ $I_E=0$ $f=1.0MHz$			28	pF

RATING AND CHARACTERISTIC CURVES (PBSS5240)



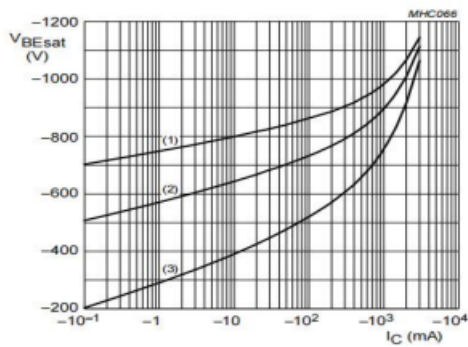
$V_{CE} = -2V$.
 (1) $T_{amb} = 150\text{ }^{\circ}C$.
 (2) $T_{amb} = 25\text{ }^{\circ}C$.
 (3) $T_{amb} = -55\text{ }^{\circ}C$.

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



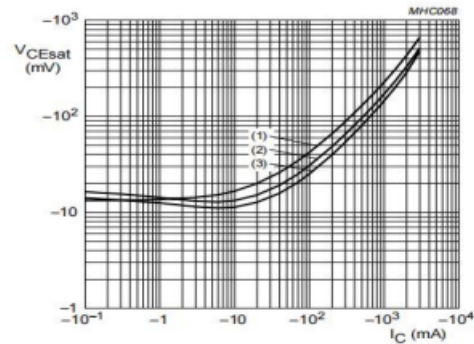
$V_{CE} = -2V$.
 (1) $T_{amb} = -55\text{ }^{\circ}C$.
 (2) $T_{amb} = 25\text{ }^{\circ}C$.
 (3) $T_{amb} = 150\text{ }^{\circ}C$.

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



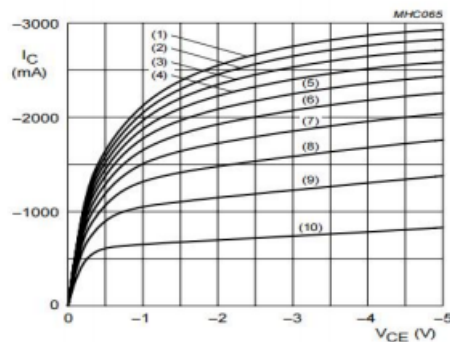
$I_C/I_B = 20$.
 (1) $T_{amb} = -55\text{ }^{\circ}C$.
 (2) $T_{amb} = 25\text{ }^{\circ}C$.
 (3) $T_{amb} = 150\text{ }^{\circ}C$.

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



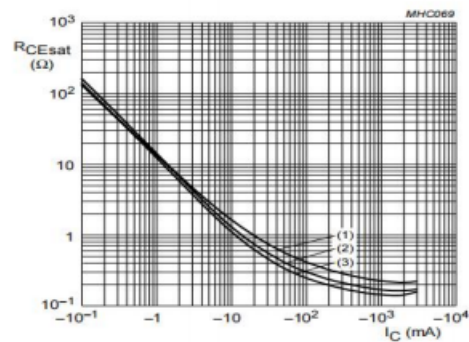
$I_C/I_B = 20$.
 (1) $T_{amb} = 150\text{ }^{\circ}C$.
 (2) $T_{amb} = 25\text{ }^{\circ}C$.
 (3) $T_{amb} = -55\text{ }^{\circ}C$.

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



(1) $I_B = -23.0\text{ mA}$. (5) $I_B = -13.8\text{ mA}$. (8) $I_B = -6.9\text{ mA}$.
 (2) $I_B = -20.7\text{ mA}$. (6) $I_B = -11.5\text{ mA}$. (9) $I_B = -4.6\text{ mA}$.
 (3) $I_B = -18.4\text{ mA}$. (7) $I_B = -9.2\text{ mA}$. (10) $I_B = -2.3\text{ mA}$.
 (4) $I_B = -16.1\text{ mA}$.

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



$I_C/I_B = 20$.
 (1) $T_{amb} = 150\text{ }^{\circ}C$.
 (2) $T_{amb} = 25\text{ }^{\circ}C$.
 (3) $T_{amb} = -55\text{ }^{\circ}C$.

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