3A / 12V Bipolar transistor

2SD2678

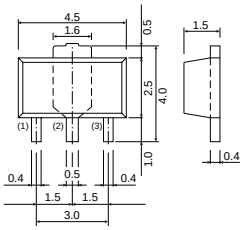
●Applications
Low frequency amplification, driver

●Features
1) Collector current is high.
2) Low collector-emitter saturation voltage.
($V_{CE(sat)} \leq 250mV$ at $I_C = 1.5A$, $I_B = 30mA$)

●Structure
NPN epitaxial planar silicon transistor

●External dimensions (Unit : mm)

MPT3



(1)Base
(2)Collector
(3)Emitter

Abbreviated symbol : XX

●Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	15	V
Collector-emitter voltage		V_{CEO}	12	V
Emitter-base voltage		V_{EBO}	6	V
Collector current	DC	I_C	3	A
	Pulse	I_{CP}	6 ∗1	
Power dissipation		P_C	0.5 ∗2	W
			2 ∗3	
Junction temperature		Tj	150	°C
Storage temperature		Tstg	−55 to +150	°C

∗1 Pw=1ms, Pulsed.
∗2 Each terminal mounted on a recommended land.
∗3 Mounted on a 40×40×0.7mm ceramic board.

●Packaging specifications

	Package	MPT3
	Packaging type	Taping
	Code	T100
Part No.	Basic ordering unit (pieces)	1000
2SD2678		◯

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BV_{CEO}	12	–	–	V	I_C=1mA
Collector-base breakdown voltage	BV_{CBO}	15	–	–		I_C=10μA
Emitter-base breakdown voltage	BV_{EBO}	6	–	–		I_E=10μA
Collector cut-off current	I_{CBO}	–	–	100	nA	V_{CB}=15V
Emitter cut-off current	I_{EBO}	–	–	100		V_{EB}=6V
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	120	250	mV	I_C/I_B=1.5A/30mA
DC current gain	h_{FE} ∗	270	–	680	–	V_{CE}=2V, I_C=500mA
Transition frequency	f_T ∗	–	360	–	MHz	V_{CE}=2V, I_E= −500mA , f=100MHz
Collector output capacitance	Cob	–	20	–	pF	V_{CB}=10V , I_E=0mA , f=1MHz

∗ Pulsed

●Electrical characteristics curves

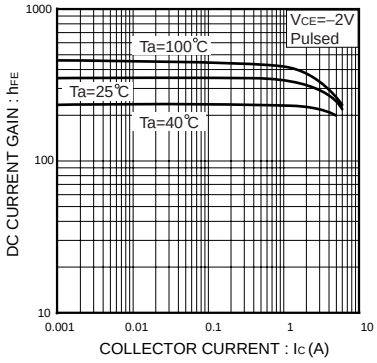


Fig.1 DC current gain vs. collector current

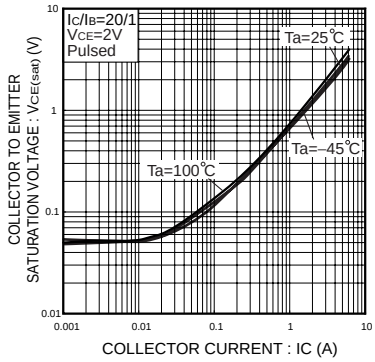


Fig.2 Collector-emitter saturation voltage vs. collector current

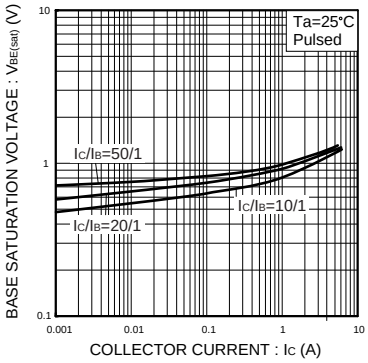


Fig.3 Base-emitter saturation voltage vs.collector current

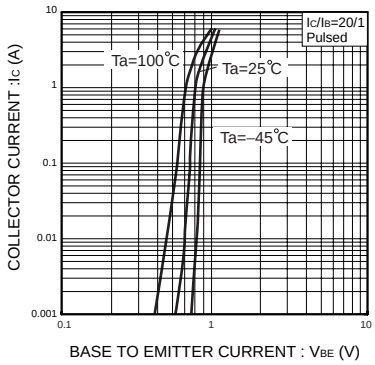


Fig.4 Grounded emitter propagation characteristics

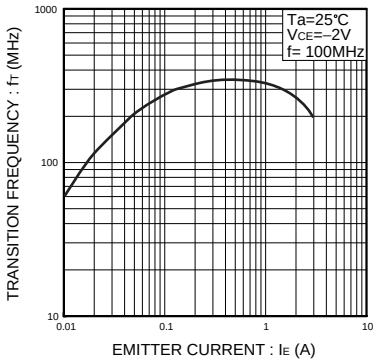


Fig.5 Gain bandwidth product vs. emitter current

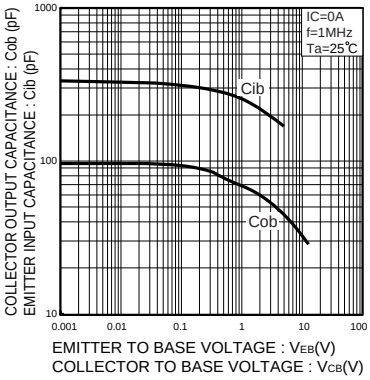


Fig.6 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

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