查询2SC5028供应商 捷多邦，专业PCB打样工厂，24小时加急出货

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

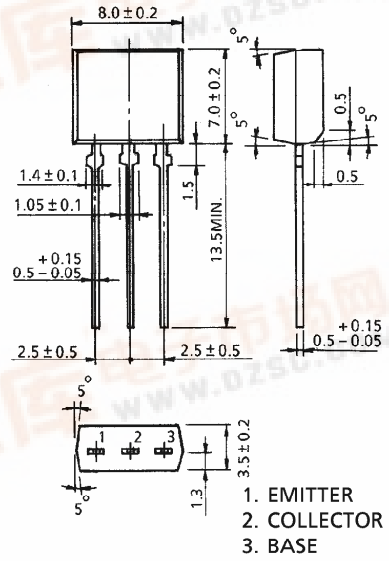
2SC5028

POWER AMPLIFIER APPLICATIONS

POWER SWITCHING APPLICATIONS

- Low Collector Saturation Voltage : $V_{CE(sat)} = -0.5V$ (Max.)
- High Collector Power Dissipation : $P_C = 1.3W$ (Ta = 25°C)
- High Speed Switching Time : $t_{stg} = 500ns$ (Typ.)
- Complementary to 2SA1891

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	2-8M1A

Weight : 0.55g (Typ.)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	2	A
Base Current	I_B	0.2	A
Collector Power Dissipation	P_C	1.3	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	−55~150	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = 80V$, $I_E = 0$	—	—	1.0	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = 6V$, $I_C = 0$	—	—	1.0	μA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = 10mA$, $I_B = 0$	50	—	—	V
DC Current Gain		$h_{FE(1)}$	$V_{CE} = 2V$, $I_C = 100mA$	120	—	400	
		$h_{FE(2)}$	$V_{CE} = 2V$, $I_C = 1.5A$	40	—	—	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	$I_C = 1A$, $I_B = 0.05A$	—	—	0.5	V
	Base-Emitter	$V_{BE(sat)}$	$I_C = 1A$, $I_B = 0.05A$	—	—	1.2	
Transition Frequency		f_T	$V_{CE} = 2V$, $I_C = 100mA$	—	100	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = 10V$, $I_E = 0$, f = 1MHz	—	14	—	pF
Switching Time	Turn-on Time	t_{on}	20μs, I_{B1}, I_{B2}, INPUT, OUTPUT, 30Ω, 30V	—	0.1	—	μs
	Storage Time	t_{stg}	$I_{B1} = -I_{B2} = 0.05A$, DUTY CYCLE ≦ 1%	—	0.5	—	
	Fall Time	t_f		—	0.1	—	

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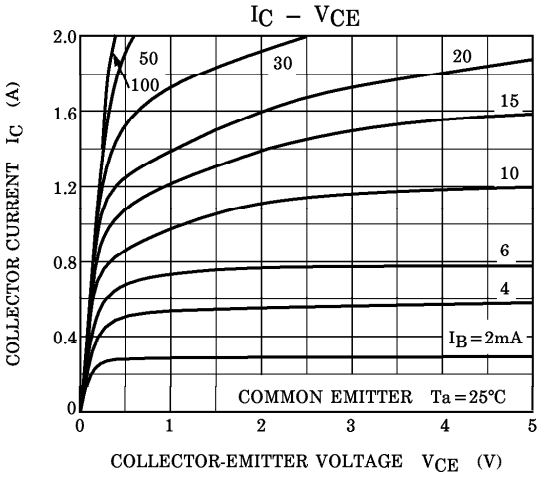
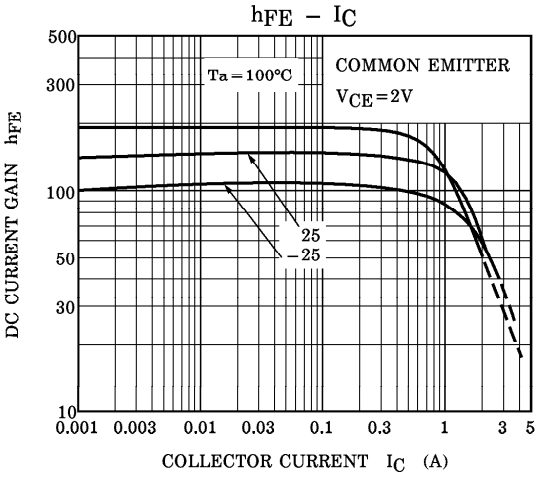
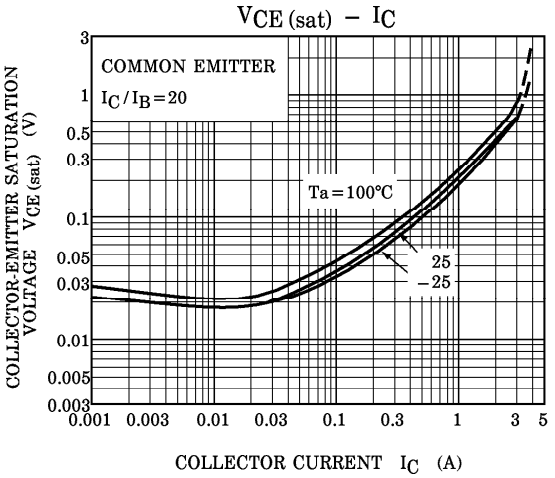
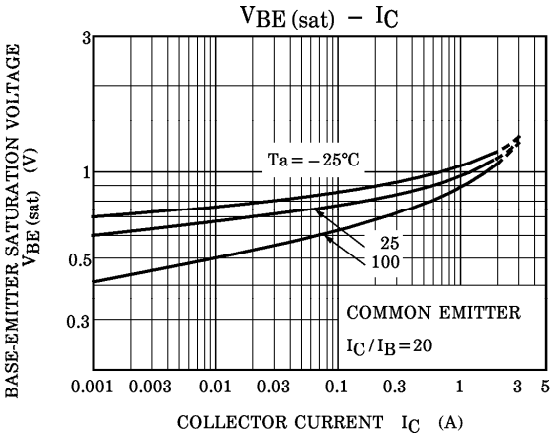
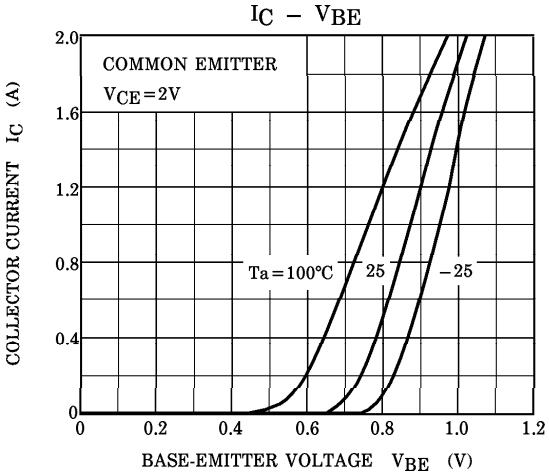
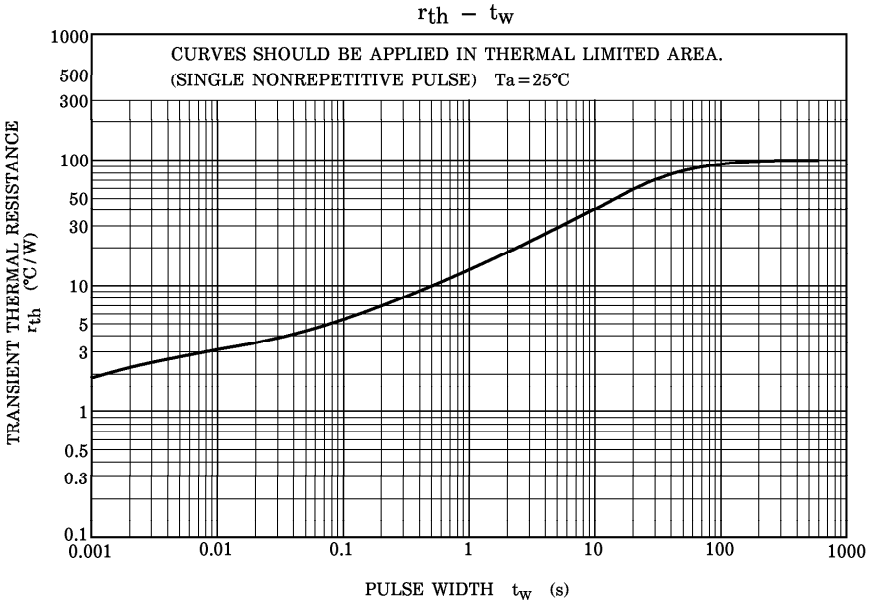

IC – VCE
COLLECTOR CURRENT IC (A)
COLLECTOR-EMITTER VOLTAGE VCE (V)
50
100
30
20
15
10
6
4
IB = 2mA
COMMON EMITTER Ta = 25°C
0
0.4
0.8
1.2
1.6
2.0
0
1
2
3
4
5

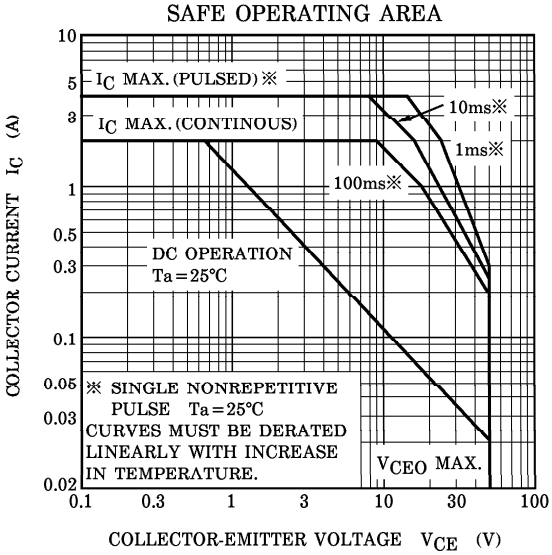

hFE – IC
DC CURRENT GAIN hFE
COLLECTOR CURRENT IC (A)
Ta = 100°C
COMMON EMITTER
VCE = 2V
25
−25
500
300
100
50
30
10
0.001
0.003
0.01
0.03
0.1
0.3
1
3
5

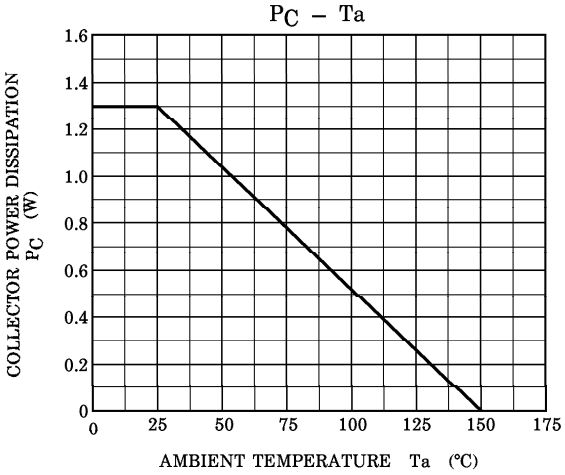

VCE (sat) – IC
COLLECTOR-EMITTER SATURATION VOLTAGE VCE (sat) (V)
COLLECTOR CURRENT IC (A)
COMMON EMITTER
IC / IB = 20
Ta = 100°C
25
−25
3
1
0.5
0.3
0.1
0.05
0.03
0.01
0.005
0.003
0.001
0.003
0.01
0.03
0.1
0.3
1
3
5


VBE (sat) – IC
BASE-EMITTER SATURATION VOLTAGE VBE (sat) (V)
COLLECTOR CURRENT IC (A)
Ta = −25°C
25
100
COMMON EMITTER
IC / IB = 20
3
1
0.5
0.3
0.001
0.003
0.01
0.03
0.1
0.3
1
3
5


IC – VBE
COLLECTOR CURRENT IC (A)
BASE-EMITTER VOLTAGE VBE (V)
COMMON EMITTER
VCE = 2V
Ta = 100°C
25
−25
2.0
1.6
1.2
0.8
0.4
0
0
0.2
0.4
0.6
0.8
1.0
1.2


rth – tw
CURVES SHOULD BE APPLIED IN THERMAL LIMITED AREA.
(SINGLE NONREPETITIVE PULSE) Ta=25°C
TRANSIENT THERMAL RESISTANCE rth (°C/W)
1000
500
300
100
50
30
10
5
3
1
0.5
0.3
0.1
0.001
0.01
0.1
1
10
100
1000
PULSE WIDTH tw (s)


SAFE OPERATING AREA
IC MAX. (PULSED) ※
IC MAX. (CONTINOUS)
10ms※
1ms※
100ms※
DC OPERATION
Ta=25°C
※ SINGLE NONREPETITIVE PULSE Ta=25°C
CURVES MUST BE DERATED LINEARLY WITH INCREASE IN TEMPERATURE.
VCEO MAX.
COLLECTOR CURRENT IC (A)
10
5
3
1
0.5
0.3
0.1
0.05
0.03
0.02
0.1
0.3
1
3
10
30
100
COLLECTOR-EMITTER VOLTAGE VCE (V)


PC – Ta
COLLECTOR POWER DISSIPATION PC (W)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
0
25
50
75
100
125
150
175
AMBIENT TEMPERATURE Ta (°C)