

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

# 2SC4213

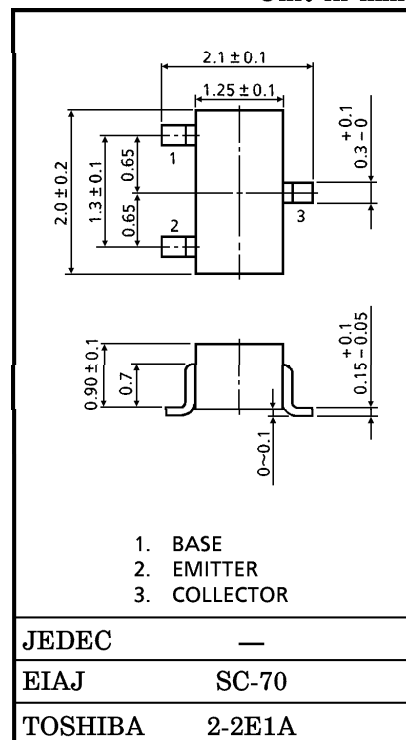
FOR MUTING AND SWITCHING APPLICATIONS

Unit in mm

- High Emitter-Base Voltage :  $V_{EBO} = 25V$  (Min.)
- High Reverse  $h_{FE}$  : Reverse  $h_{FE} = 150$  (Typ.)  
( $V_{CE} = -2V, I_C = -4mA$ )
- Low On Resistance :  $R_{ON} = 1\Omega$  (Typ.) ( $I_B = 5mA$ )
- High DC Current Gain :  $h_{FE} = 200 \sim 1200$
- Small Package

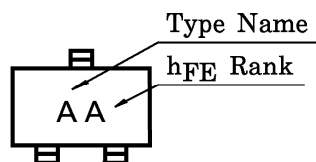
MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	50	V
Collector-Emitter Voltage	$V_{CEO}$	20	V
Emitter-Base Voltage	$V_{EBO}$	25	V
Collector Current	$I_C$	300	mA
Base Current	$I_B$	60	mA
Collector Power Dissipation	$P_C$	100	mW
Junction Temperature	$T_j$	125	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55~125	$^\circ C$



Weight : 0.006g

MARKING



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		$I_{CBO}$	$V_{CB} = 50V, I_E = 0$	—	—	0.1	$\mu A$
Emitter Cut-off Current		$I_{EBO}$	$V_{EB} = 25V, I_C = 0$	—	—	0.1	$\mu A$
DC Current Gain		$h_{FE}$ (Note)	$V_{CE} = 2V, I_C = 4mA$	200	—	1200	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C = 30A, I_B = 3mA$	—	0.042	0.1	V
Base-Emitter Voltage		$V_{BE}$	$V_{CE} = 2V, I_C = 4mA$	—	0.61	—	V
Transition Frequency		$f_T$	$V_{CE} = 6V, I_C = 4mA$	—	30	—	MHz
Collector Output Capacitance		$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1MHz$	—	4.8	7	pF
Switching Time	Turn-on Time	$t_{on}$	<p>DUTY CYCLE <math>\leq 2\%</math></p>	—	160	—	ns
	Storage Time	$t_{stg}$		—	500	—	
	Fall Time	$t_f$		—	130	—	

(Note) :  $h_{FE}$  Classification    A : 200~700,    B : 350~1200

