Unit in mm

### TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE

# 2 S C 2 8 7 8

#### FOR MUTING AND SWITCHING APPLICATIONS

• High Emitter-Base Voltage: VEBO=25V (Min.)

• High Reverse hFE : Reverse hFE=150 (Typ.)

 $(V_{CE} = -2V, I_{C} = -4mA)$ 

• Low On Resistance :  $R_{ON}=1\Omega$  (Typ.) ( $I_B=5mA$ )

## MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$v_{\mathrm{CBO}}$	50	V
Collector-Emitter Voltage	$v_{CEO}$	20	V
Emitter-Base Voltage	$V_{ m EBO}$	25	V
Collector Current	$I_{\mathbf{C}}$	300	mA
Base Current	$I_{\mathbf{B}}$	60	mA
Collector Power Dissipation	PC	400	mW
Junction Temperature	$T_{j}$	125	°C
Storage Temperature Range	$T_{ m stg}$	-55~125	°C

1. EMITTER 2. COLLECTOR 3. BASE JEDEC TO-92 EIAJ SC-43

2-5F1B

Weight: 0.21g

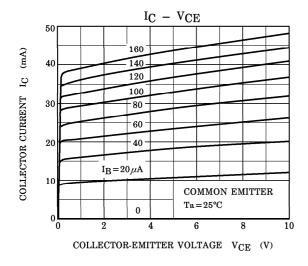
TOSHIBA

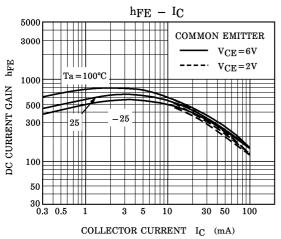
# ELECTRICAL CHARACTERISTICS (Ta = 25°C)

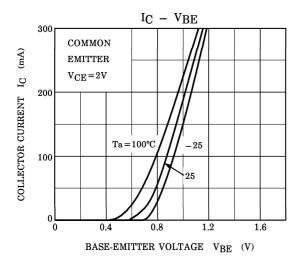
CHARAC	TERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-o	off Current	$I_{CBO}$	$V_{CB} = 50V$ , $I_E = 0$	_	_	0.1	$\mu$ A
Emitter Cut-of	f Current	$I_{EBO}$	$V_{EB} = 25V, I_C = 0$	_	_	0.1	$\mu$ A
DC Current G	ain	h <sub>FE</sub> (Note)	$V_{CE}=2V$ , $I_{C}=4mA$	200	_	1200	
Collector-Emit Voltage	ter Saturation	V <sub>CE</sub> (sat)	$I_C=30$ mA, $I_B=3$ mA	_	0.042	0.1	V
Base-Emitter V	oltage	$ m V_{BE}$	$V_{CE}=2V$ , $I_{C}=4mA$	_	0.61	_	V
Transition Frequency		$ m 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	ton	OUTPUT  INPUT $4k\Omega$ $10V$ $1\mu s$ $V_{BB}$ $V_{CC}$ $=-3V$ $=12V$ DUTY CYCLE $\leq 2\%$	_	160	_	
	Storage Time	$\mathbf{t}_{ ext{stg}}$			500	_	ns
	Fall Time	tf			130	_	

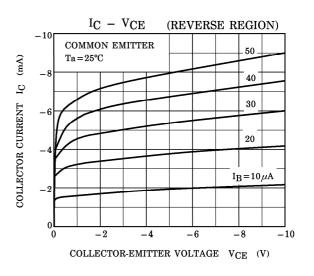
(Note) : hFE Classification  $A:200{\sim}700$ ,  $B:350{\sim}1200$ 

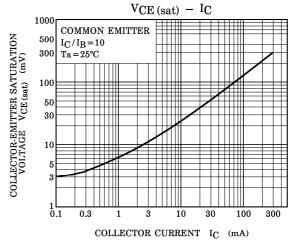
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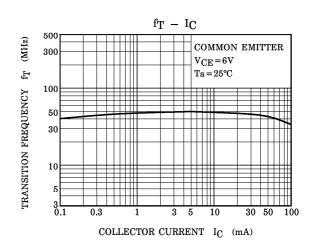




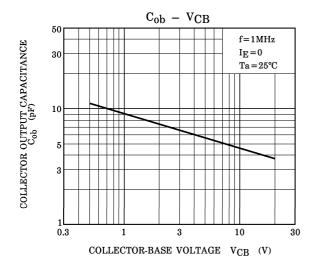


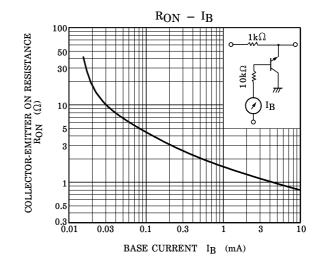


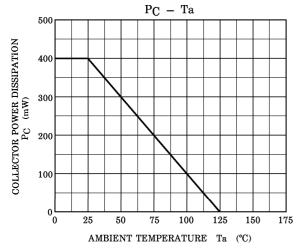




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