SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

2N4400

FOR GENERAL PURPOSE USE SWITCHING AND AMPLIFIER APPLICATIONS.

FEATURES:

. Low Leakage Current

: I_{CEV}=100nA(Max.), I_{BEV}=-100nA(Max.)
@ V_{CE}=35V, V_{BE}=-0.4V

. Excellent DC Current Gain Linearity

. Low Saturation Voltage

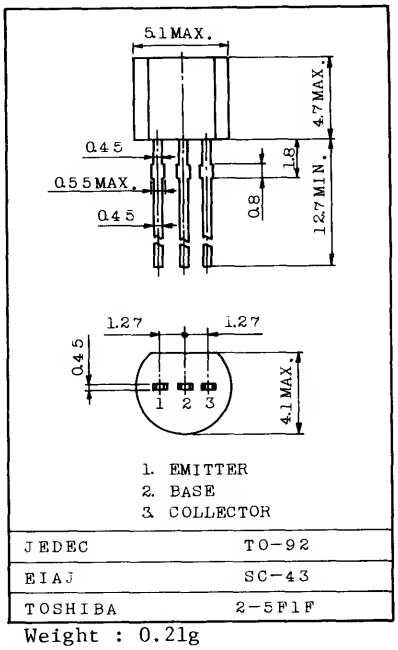
: $V_{CE(sat)}$=0.4V(Max.) @ I_C=150mA, I_B=15mA

. Low Collector Output Capacitance

: C_{ob}=6.5pF(Max.) @ V_{CB}=5V

. Complementary to 2N4402

Unit in mm



JEDEC	TO-92
EIAJ	SC-43
TOSHIBA	2-5F1F

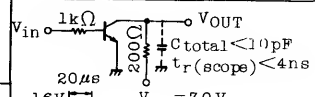
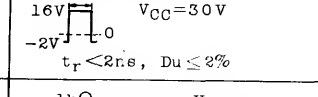
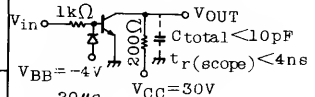
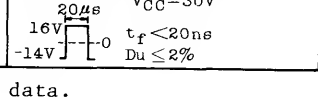
Weight : 0.21g

MAXIMUM RATINGS (Ta=25°C)

	CHARACTERISTIC	SYMBOL	RATING	UNIT
※	Collector-Base Voltage	V_{CBO}	60	V
※	Collector-Emitter Voltage	V_{CEO}	40	V
※	Emitter-Base Voltage	V_{EBO}	6	V
※	Collector Current	I_C	600	mA
	Base Current	I_B	100	mA
※	Collector Power Dissipation (Ta=25°C) Derate Linearly 25°C	P_C	350	mW
			2.8	mW/°C
※	Collector Power Dissipation (Tc=25°C) Derate Linearly 25°C	P_C	1.0	W
			8	mW/°C
※	Thermal Resistance (Junction to Ambient)	$R_{th(j-a)}$	357	°C/W
※	Thermal Resistance (Junction to Case)	$R_{th(j-c)}$	125	°C/W
※	Junction Temperature	T_j	150	°C
※	Storage Temperature Range	T_{stg}	-55~150	°C

※In accordance with JEDEC registration data.

ELECTRICAL CHARACTERISTICS (Ta=25°C)

	CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
※	Collector Cut-off Current		I_{CEV}	V_{CE}=35V, V_{BE}=-0.4V	-	-	100	nA
※	Base Cut-off Current		I_{BEV}	V_{CE}=35V, V_{BE}=-0.4V	-	-	-100	nA
※	Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	I_C=0.1mA, I_E=0	60	-	-	V
※	Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	I_C=1mA, I_B=0	40	-	-	V
※	Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	I_E=0.1mA, I_C=0	6	-	-	V
※	DC Current Gain		$h_{FE(1)}$	V_{CE}=1V, I_C=1mA	20	-	-	
			$h_{FE(2)}$	V_{CE}=1V, I_C=10mA	40	-	-	
			$h_{FE(3)}$	V_{CE}=1V, I_C=150mA	50	-	150	
			$h_{FE(4)}$	V_{CE}=2V, I_C=500mA	20	-	-	
※	Collector-Emitter Saturation Voltage		$V_{CE(sat)1}$	I_C=150mA, I_B=15mA	-	-	0.4	V
			$V_{CE(sat)2}$	I_C=500mA, I_B=50mA	-	-	0.75	
※	Base-Emitter Saturation Voltage		$V_{BE(sat)1}$	I_C=150mA, I_B=15mA	0.75	-	0.95	V
			$V_{BE(sat)2}$	I_C=500mA, I_B=50mA	-	-	1.2	
※	Transition Frequency		f_T	V_{CE}=10V, I_C=20mA f=100MHz	200	-	-	MHz
※	Collector Output Capacitance		C_{ob}	V_{CB}=5V, I_E=0, f=1MHz	-	-	6.5	pF
※	Input Capacitance		C_{ib}	V_{EB}=0.5V, I_C=0, f=1MHz	-	-	30	pF
※	Input Impedance		h_{ie}	V_{CE}=10V, I_C=1mA f=1kHz	0.5	-	7.5	kΩ
※	Voltage Feedback Ratio		h_{re}		0.1	-	8	×10-4
※	Small-Signal Current Gain		h_{fe}		20	-	250	
※	Collector Output Admittance		h_{oe}		1.0	-	30	μS
※	Switching Time	Delay Time	t_d		-	-	15	ns
		Rise Time	t_r		-	-	20	
		Storage Time	t_{stg}		-	-	225	
		Fall Time	t_f		-	-	30	

※ In accordance with JEDEC registration data.