

TOSHIBA (DISCRETE/OPTO) 4SE D ■ 9097250 0018002 3 ■ TOSH
 TOSHIBA TRANSISTOR
 SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

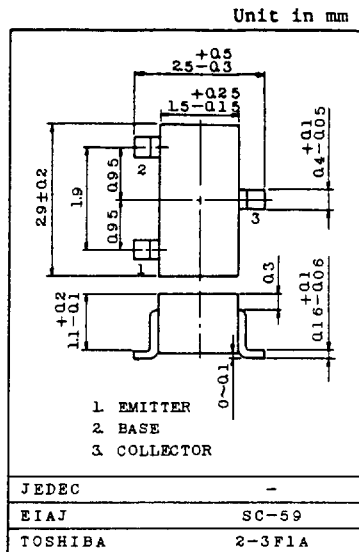
YTS3906

T 31-15

FOR GENERAL PURPOSE USE SWITCHING AND AMPLIFIER APPLICATIONS.

FEATURES:

- . Low Leakage Current
 : $I_{CEV} = -50\text{nA (Max.)}$, $I_{BEV} = 50\text{nA (Max.)}$
 @ $V_{CE} = -30\text{V}$, $V_{BE} = 3\text{V}$
- . Excellent DC Current Gain Linearity
- . Low Saturation Voltage
 : $V_{CE(sat)} = -0.4\text{V (Max.)}$ @ $I_C = -50\text{mA}$, $I_B = 5\text{mA}$
- . Low Collector Output Capacitance
 : $C_{ob} = 4.5\text{pF (Max.)}$ @ $V_{CB} = -5\text{V}$
- . Complementary to YTS3904



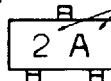
Weight : 0.012g

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

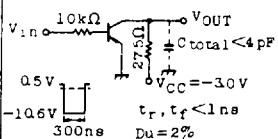
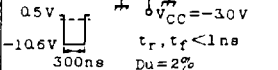
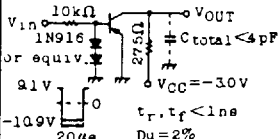
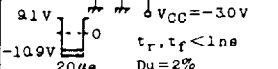
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-40	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-200	mA
Base Current	I_B	-50	mA
Collector Power Dissipation ($T_a = 25^\circ\text{C}$) Derate Linearly 25°C	PC	200	mW
		1.6	$^\circ\text{C/W}$
Thermal Resistance (Junction to Ambient)	$R_{th(j-a)}$	625	$^\circ\text{C/W}$
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 ~ 150	$^\circ\text{C}$

Marking

Type Name



ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICEV	VCE=-30V, VBE=3V	-	-	-50	nA
Base Cut-off Current		IBEV	VCE=-30V, VBE=3V	-	-	50	nA
Collector-Base Breakdown Voltage		V(BR)CBO	IC=-10μA, IE=0	-40	-	-	V
Collector-Emitter Breakdown Voltage		V(BR)CEO	IC=-1mA, IB=0	-40	-	-	V
Emitter-Base Breakdown Voltage		V(BR)EBO	IE=-10μA, IC=0	-5	-	-	V
DC Current Gain	hFE(1)	VCE=-1V, IC=-0.1mA	60	-	-		
	hFE(2)	VCE=-1V, IC=-1mA	80	-	-		
	hFE(3)	VCE=-1V, IC=-10mA	100	-	300		
	hFE(4)	VCE=-1V, IC=-50mA	60	-	-		
	hFE(5)	VCE=-1V, IC=-100mA	30	-	-		
Collector-Emitter Saturation Voltage	VCE(sat)1	IC=-10mA, IB=-1mA	-	-	-0.25	V	
	VCE(sat)2	IC=-50mA, IB=-5mA	-	-	-0.4		
Base-Emitter Saturation Voltage	VBE(sat)1	IC=-10mA, IB=-1mA	-0.65	-	-0.85	V	
	VBE(sat)2	IC=-50mA, IB=-5mA	-	-	-0.95		
Transition Frequency	fT	VCE=-20V, IC=-10mA f=100MHz	250	-	-	MHz	
Collector Output Capacitance	Cob	VCB=-5V, IE=0, f=1MHz	-	-	4.5	pF	
Input Capacitance	Cib	VEB=-0.5V, IC=0, f=1MHz	-	-	10	pF	
Input Impedance	hie		2.0	-	12	kΩ	
Voltage Feedback Ratio	hre	VCE=-10V, IC=-1mA	1.0	-	10	×10 ⁻⁴	
Small-Signal Current Gain	hfe	f=1kHz	100	-	400		
Collector Output Admittance	hoe		3.0	-	60	μS	
Noise Figure	NF	VCE=-5V, IC=-0.1mA Rg=1kΩ, f=10Hz ~ 15.7kHz	-	-	4	dB	
Switching Time	Delay Time	td		-	-	35	ns
	Rise Time	tr		-	-	35	
	Storage Time	tstg		-	-	225	
	Fall Time	tf		-	-	75	