

<b>SANYO</b>	No. 1968A	<b>2SC3749</b> NPN Triple Diffused Planar Type Silicon Transistor SWITCHING REGULATOR APPLICATIONS
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**Features**

- . High breakdown voltage and high reliability
- . Fast switching speed
- . Wide ASO
- . Adoption of MBIT process
- . Micaless package facilitating mounting

**Absolute Maximum Ratings at Ta=25°C**

			unit
Collector-to-Base Voltage	V <sub>CB0</sub>	800	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>	500	V
Emitter-to-Base Voltage	V <sub>EBO</sub>	7	V
Collector Current	I <sub>C</sub>	3	A
Peak Collector Current	i <sub>cp</sub>	PW ≤ 300μs, Duty cycle ≤ 10% 6 A	
Base Current	I <sub>B</sub>	1	A
Collector Dissipation	P <sub>C</sub>	Tc=25°C 25 W	
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150 °C	

**Electrical Characteristics at Ta=25°C**

			min	typ	max	unit
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> =500V, I <sub>E</sub> =0			10	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0			10	μA
DC Current Gain	h <sub>FE</sub> (1)	V <sub>CE</sub> =5V, I <sub>C</sub> =0.3A	15*		50*	
		V <sub>CE</sub> =5V, I <sub>C</sub> =1.5A	8			
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =0.3A		18		MHz
Output Capacitance	c <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz		50		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =1.5A, I <sub>B</sub> =0.3A			1.0	V
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =1.5A, I <sub>B</sub> =0.3A			1.5	V
Collector-to-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =1mA, I <sub>E</sub> =0	800			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =5mA, R <sub>BE</sub> =∞	500			V
Emitter-to-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =1mA, I <sub>C</sub> =0	7			V

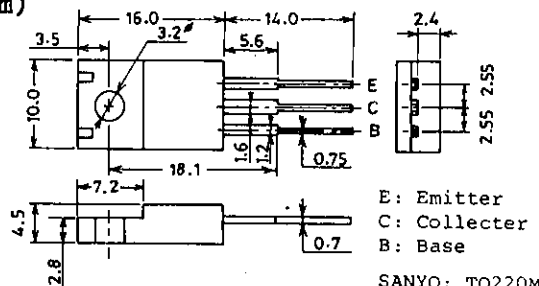
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\*: The h<sub>FE</sub>(1) of the 2SC3749 is classified as follows. When specifying the h<sub>FE</sub>(1) rank, specify two ranks or more in principle.

15	L	30	20	M	40	30	N	50
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**Package Dimensions 2041**

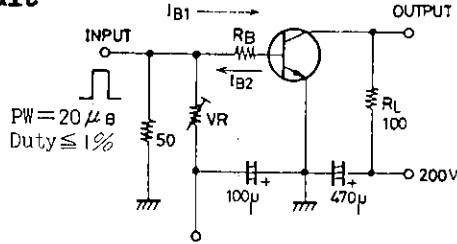
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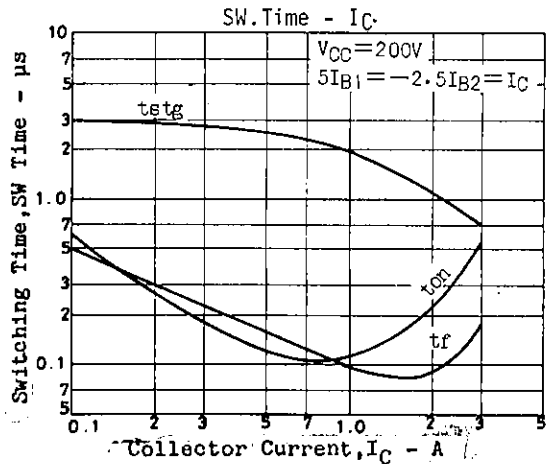
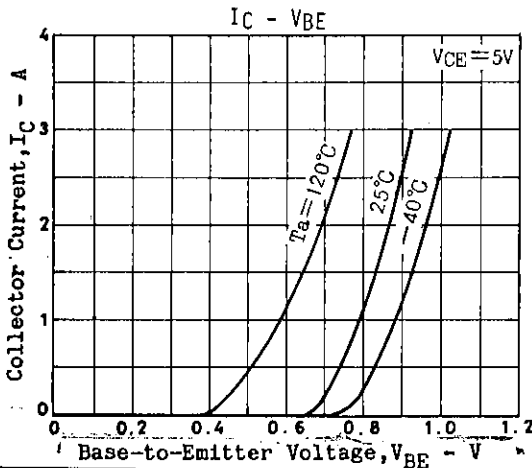
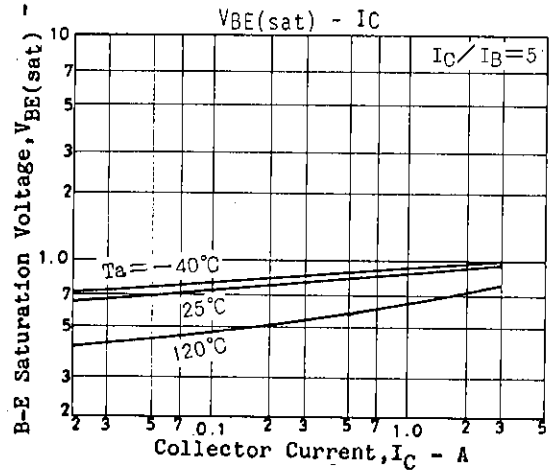
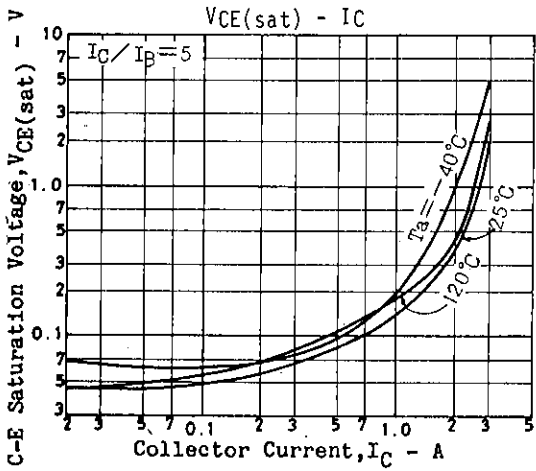
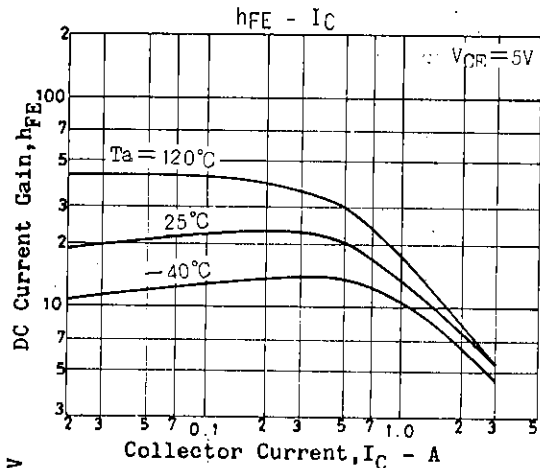
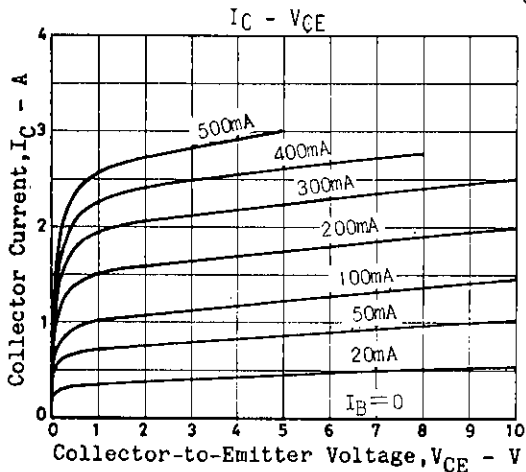
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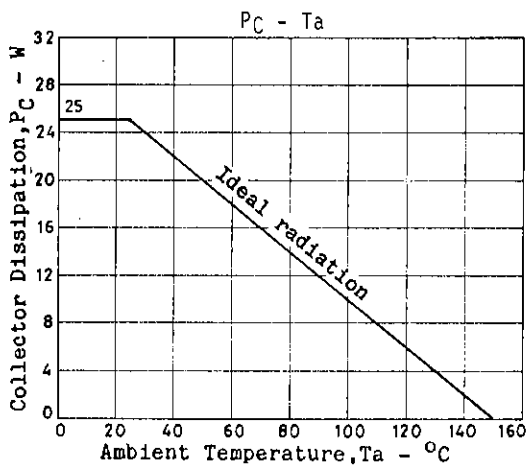
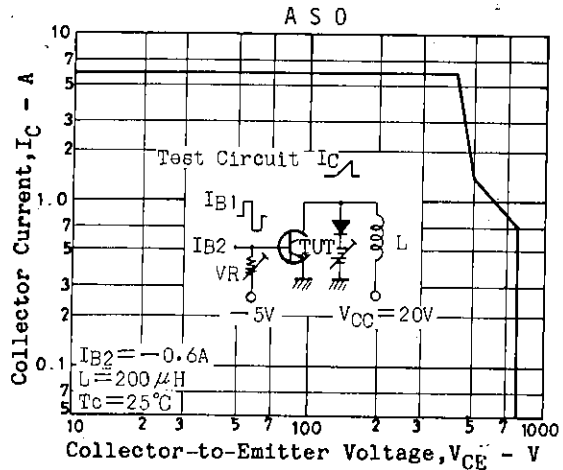
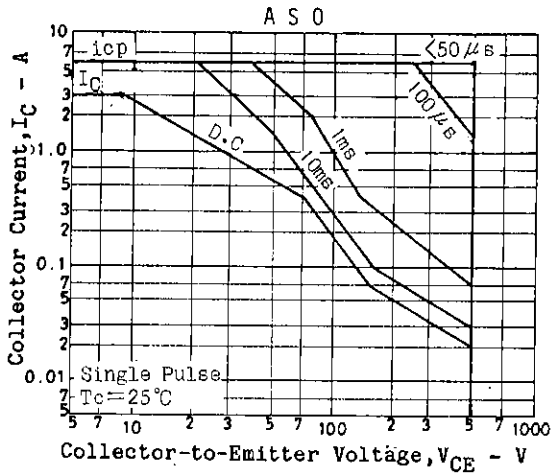
	$V_{CEX(sus)}$	$I_C=1.5A,$ $I_{B1}=-I_{B2}=0.6A,$ $L=2mH, \text{clamped}$	min	typ	max	unit
Collector-to-Emitter Sustain Voltage			500			V
Turn-on Time	$t_{on}$	$V_{CC}=200V,$ $5I_{B1}=-2.5I_{B2}=I_C=2A,$ $R_L=100ohms$		0.5		$\mu s$
Storage Time	$t_{stg}$			3.0		$\mu s$
Fall Time	$t_f$			0.3		$\mu s$

Switching Time Test Circuit



Unit (Resistance :  $\Omega$ , Capacitance : F)





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