



SANYO Semiconductors

## DATA SHEET

# 2SC6144

NPN Epitaxial Planar Silicon Transistor

## High-Current Switching Applications

### Applications

- Relay drivers, lamp drivers, motor drivers.

### Features

- Adoption of MBIT process.
- High current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.

### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CB0</sub>		60	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		50	V
Emitter-to-Base Voltage	V <sub>EB0</sub>		5	V
Collector Current	I <sub>C</sub>		10	A
Collector Current (Pulse)	I <sub>CP</sub>		13	A
Base Current	I <sub>B</sub>		2	A
Collector Dissipation	P <sub>C</sub>		2	W
		T <sub>c</sub> =25°C	25	W
Junction Temperature	T <sub>j</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

■ Any and all SANYO Semiconductor Co.,Ltd. products described or contained herein are, with regard to "standard application", intended for the use as general electronics equipment (home appliances, AV equipment, communication device, office equipment, industrial equipment etc.). The products mentioned herein shall not be intended for use for any "special application" (medical equipment whose purpose is to sustain life, aerospace instrument, nuclear control device, burning appliances, transportation machine, traffic signal system, safety equipment etc.) that shall require extremely high level of reliability and can directly threaten human lives in case of failure or malfunction of the product or may cause harm to human bodies, nor shall they grant any guarantee thereof. If you should intend to use our products for applications outside the standard applications of our customer who is considering such use and/or outside the scope of our intended standard applications, please consult with us prior to the intended use. If there is no consultation or inquiry before the intended use, our customer shall be solely responsible for the use.

■ Specifications of any and all SANYO Semiconductor Co.,Ltd. products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.

**SANYO Semiconductor Co., Ltd.**

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

# 2SC6144

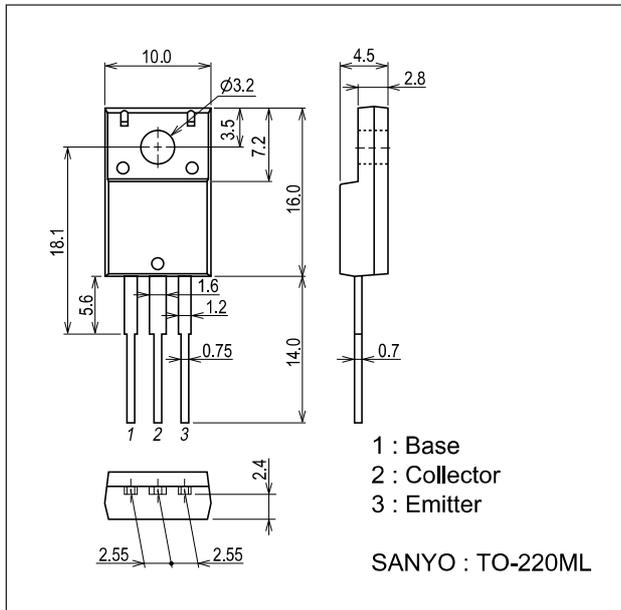
## Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=40V, I_E=0A$			10	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=4V, I_C=0A$			10	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=2V, I_C=270mA$	200		560	
Gain-Bandwidth Product	$f_T$	$V_{CE}=10V, I_C=3A$		330		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10V, f=1MHz$		60		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=6A, I_B=300mA$		180	360	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=6A, I_B=300mA$			1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0A$	60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0A$	5			V
Turn-ON Time	$t_{on}$	See specified Test Circuit.		62		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		350		ns
Fall Time	$t_f$	See specified Test Circuit.		25		ns

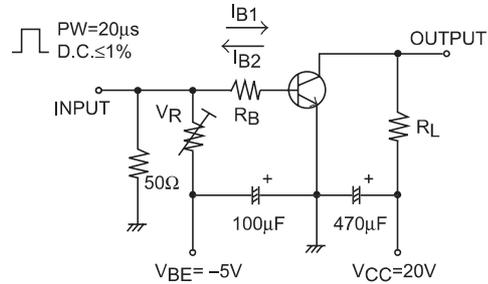
## Package Dimensions

unit : mm (typ)

7508-002



## Switching Time Test Circuit



$$I_C = 20I_{B1} = -20I_{B2} = 5A$$

