

**NPN SILICON EPITAXIAL TRANSISTOR  
 FOR HIGH-SPEED SWITCHING**

The 2SC4814 is a power transistor featuring low-saturation voltage and high  $h_{FE}$ . This transistor is ideal for high-precision control such as PWM control for pulse motors or brushless motors in OA and FA equipment and for solenoid driving in automotive equipment.

In addition, this transistor features a package that can be auto-mounted in radial taping specifications, thus contributing to mounting cost reduction.

**FEATURES**

- Low  $V_{CE(sat)}$ :  $V_{CE(sat)} \leq 0.3 \text{ V}$  @  $I_C = 1.5 \text{ A}$ ,  $I_B = 10 \text{ mA}$
- High  $h_{FE}$ :  $h_{FE} = 300 \text{ to } 1,200$  @  $V_{CE} = 2.0 \text{ V}$ ,  $I_C = 1.0 \text{ A}$
- On-chip dumper-diode
- Auto-mounting possible in radial taping specifications

**ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)**

Parameter	Symbol	Conditions	Ratings	Unit
Collector to base voltage	$V_{CBO}$		120	V
Collector to emitter voltage	$V_{CEO}$		100	V
Emitter to base voltage	$V_{EBO}$		7.0	V
Collector current (DC)	$I_{C(DC)}$		$\pm 2.5$	A
Collector current (pulse)	$I_{C(pulse)}$	$PW \leq 300 \mu s$ , duty cycle $\leq 10\%$	$\pm 5.0$	A
Base current (DC)	$I_{B(DC)}$		1.0	A
Total power dissipation	$P_T$	$T_a = 25^\circ\text{C}$	1.8	W
Junction temperature	$T_j$		150	°C
Storage temperature	$T_{stg}$		-55 to +150	°C

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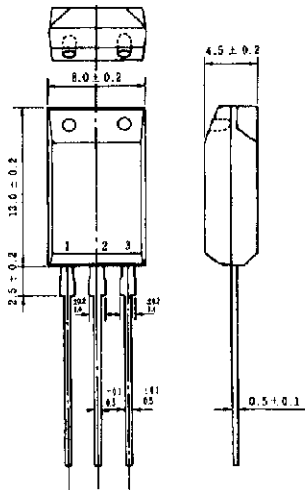
Not all devices/types available in every country. Please check with local NEC representative for availability and additional information.

查物 2SC4814 供应商  
**ELECTRICAL CHARACTERISTICS (Ta = 25°C)**

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 120\text{ V}, I_E = 0$			50	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 5\text{ V}, I_C = 0$			50	$\mu\text{A}$
DC current gain	$h_{FE1}^*$	$V_{CE} = 2\text{ V}, I_C = 1.0\text{ A}$	300	700	1,200	—
DC current gain	$h_{FE2}^*$	$V_{CE} = 2\text{ V}, I_C = 1.5\text{ A}$	250	600		—
Collector saturation voltage	$V_{CE(sat)}^*$	$I_C = 1.5\text{ A}, I_B = 10\text{ mA}$			0.3	V
Base saturation voltage	$V_{BE(sat)}^*$	$I_C = 1.5\text{ A}, I_B = 10\text{ mA}$			1.3	V
Gain bandwidth product	$f_T$	$V_{CE} = 10\text{ V}, I_C = 1.0\text{ A}$		60		MHz
Collector capacitance	$C_{ob}$	$V_{CE} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$		40		pF
Turn-on time	$t_{on}$	$I_C = 1.5\text{ A}, I_{B1} = -I_{B2} = 10\text{ mA}$		0.5		$\mu\text{s}$
Storage time	$t_{stg}$	$R_L = 8.0\ \Omega, V_{CC} = 12\text{ V}$		2.0		$\mu\text{s}$
Fall time	$t_f$	Refer to the test circuit.		0.5		$\mu\text{s}$

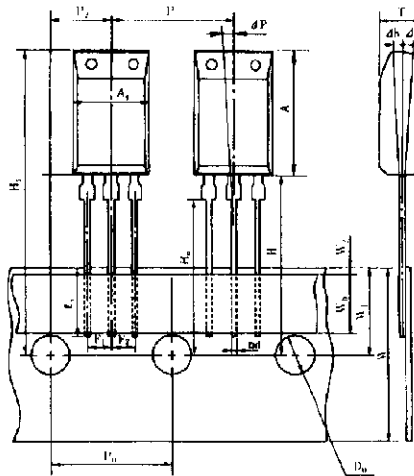
\* Pulse test  $PW \leq 350\ \mu\text{s}$ , duty cycle  $\leq 2\%$

**PACKAGE DRAWING (UNIT: mm)      TAPING SPECIFICATION**



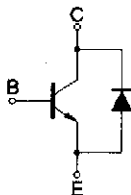
Electrode Connection

- 1. Base
- 2. Collector
- 3. Emitter

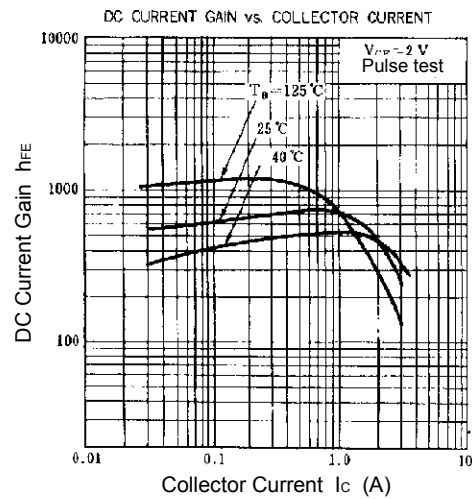
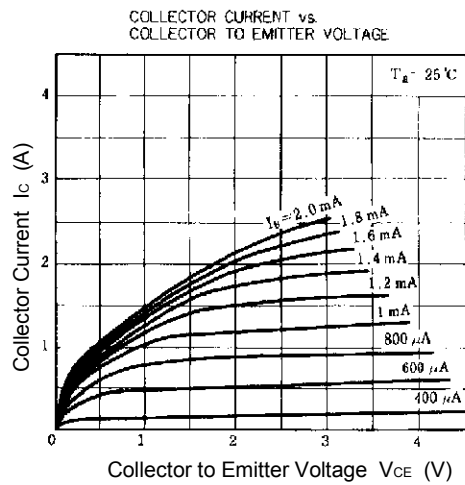
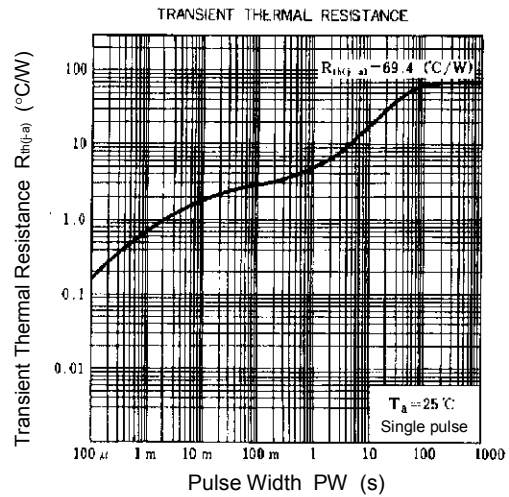
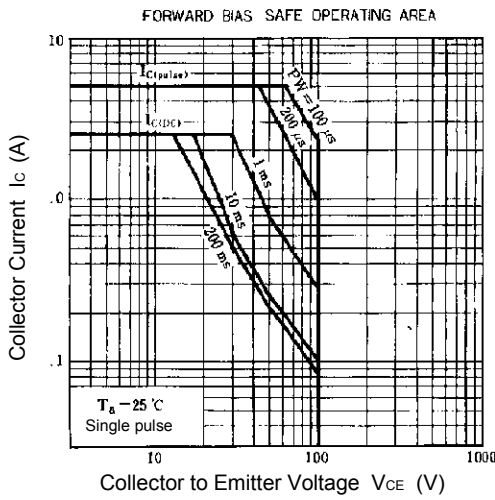
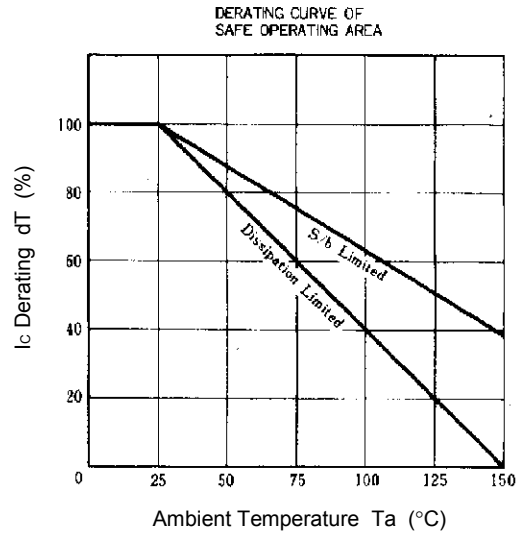
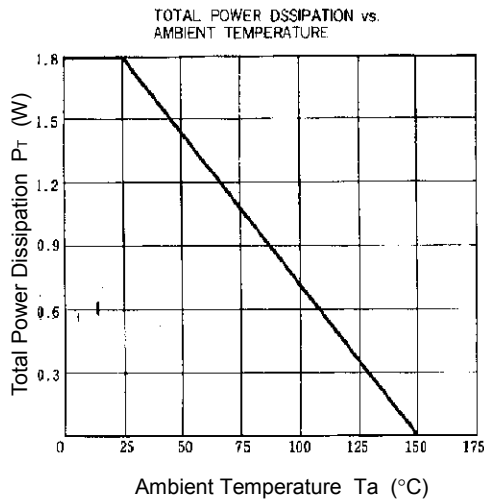


$A_1$	$8.0 \pm 0.2$
$A$	$13.0 \pm 0.2$
$D_0$	$\phi 4.0 \pm 0.2$
$d$	$0.5 \pm 0.1$
$F_1$	$2.5^{+0.4}$
$F_2$	$2.5^{+0.4}$
$H$	20.0 MAX.
$H_0$	$16.0 \pm 0.5$
$H_1$	32.2 MAX.
$\Delta h$	$0 \pm 1.0$
$t_1$	2.5 MIN.
$P$	$12.7 \pm 1.0$
$P_0$	$12.7 \pm 0.3$
$P_2$	$6.35 \pm 0.5$
$\Delta P$	$0 \pm 1.3$
$T$	$4.5 \pm 0.2$
$W$	$18.0^{+1.0}$
$W_0$	5.0 MIN.
$W_1$	$9.0 \pm 0.5$
$W_2$	0.7 MAX.

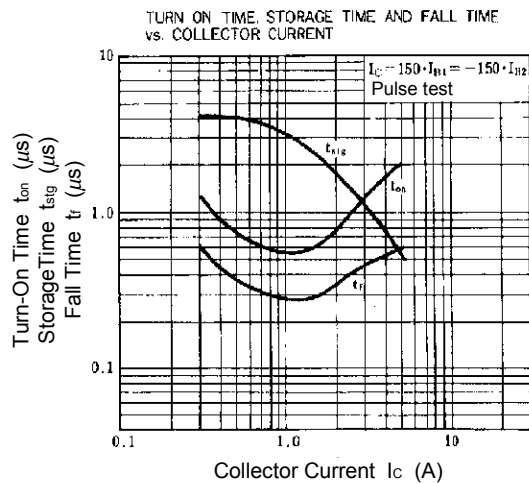
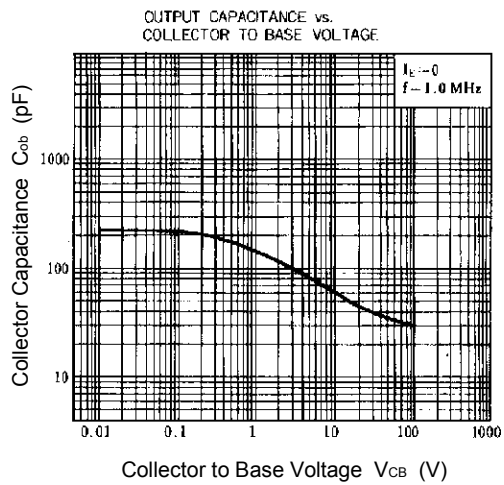
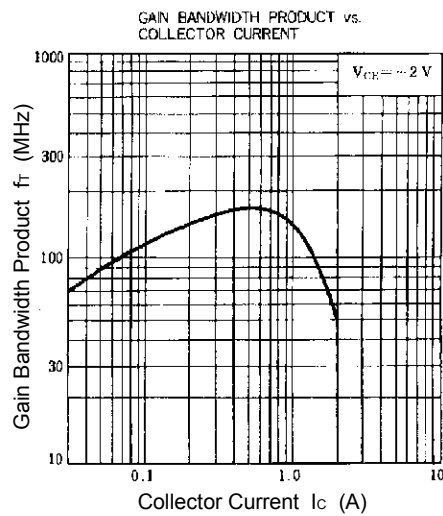
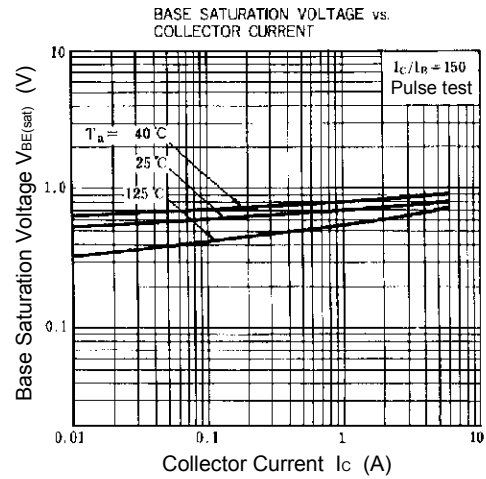
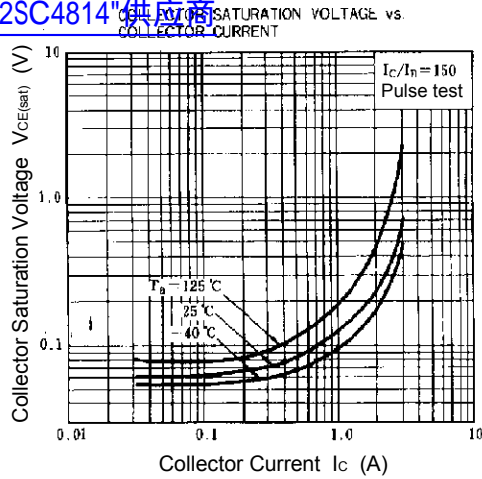
**EQUIVALENT CIRCUIT**



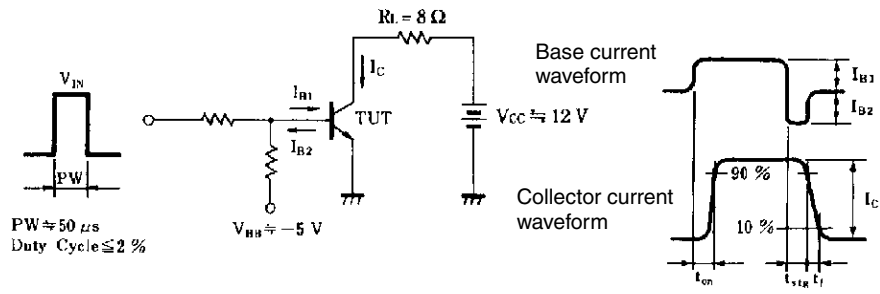
查询"2SC4814"供应商 **TYPICAL CHARACTERISTICS (Ta = 25°C)**



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查询 [2SC4814 供应商](#) SWITCHING TIME (ton, tstg, ti) TEST CIRCUIT



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