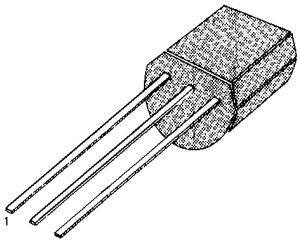
2N4400/4401 NPN EPITAXIAL SILICON TRANSISTOR

GENERAL PURPOSE TRANSISTOR

- Collector-Emitter Voltage: V_{CEO}= 40V
- Collector Dissipation: P_C (max)=625mW

TO-92



1.Emitter 2.Base 3. Collector

ABSOLUTE MAXIMUM RATINGS (T_A=25℃)

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
Collector Dissipation	P_C	625	mW
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55 ~ 150	℃

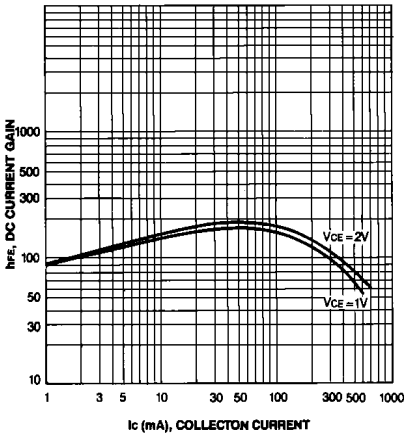
ELECTRICAL CHARACTERISTICS (T_A=25℃)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BV_{CBO}	I_C=100㎂, I_E=0	60			
★Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=1mA, I_B=0	40			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=100㎂, I_C=0	6			V
Collector Cut-off Current	I_{CEX}	V_{CE}=35V, V_{EB}=0.4V			100	nA
★DC Current Gain	h_{FE}					
:2N4401		V_{CE}=1V, I_C=0.1mA	20			
:2N4400		V_{CE}=1V, I_C=1mA	20			
:2N4401			40			
:2N4400		V_{CE}=1V, I_C=10mA	40			
:2N4401			80			
:2N4400		V_{CE}=1V, I_C=150mA	50		150	
:2N4401			100		360	
:2N4400		V_{CE}=2V, I_C=500mA	20			
:2N4401			40			
★Collector-Emitter Saturation Voltage	V_{CE}(sat)	I_C=150mA, I_B=15mA			0.4	V
		I_C=50mA, I_B=50mA			0.75	V
★Base-Emitter Saturation Voltage	V_{BE}(sat)	I_C=150mA, I_B=15mA	0.75		0.95	V
		I_C=500mA, I_B=50mA			1.2	V
Output Capacitance	C_{OB}	V_{CE}=5V, I_E=0 f=100MHz			6.5	pF
Current Gain Bandwidth Product	f_T	V_{CE}=10V, I_C=20mA				
:2N4400		f=100MHz	200			MHz
:2N4401			250			MHz
Turn On Time	T_{ON}	V_{CC}=30V, V_{BE}=2V I_C=150mA, I_B1=15mA			35	ns
Turn Off Time	T_{OFF}	V_{CC}=30V, I_C=150mA I_B1=I_B2=15mA			255	ns

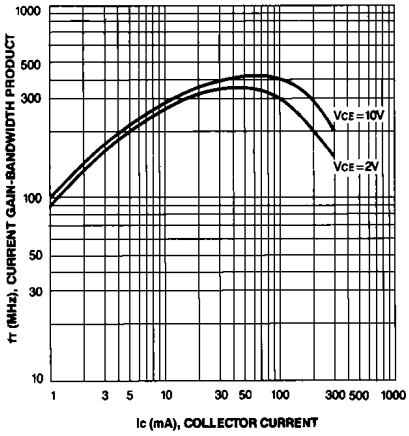
★Pulse Test: Pulse Width≤30㎲, Duty Cycle≤2%

SAMSUNG ELECTRONICS

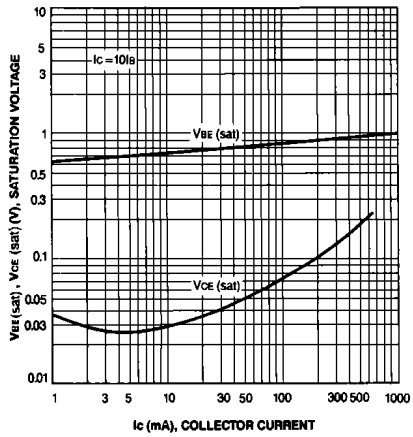
DC CURRENT GAIN



CURRENT GAIN-BANDWIDTH PRODUCT



COLLECTOR-EMITTER SATURATION VOLTAGE
BASE-EMITTER SATURATION VOLTAGE



COLLECTOR-BASE CAPACITANCE
OUTPUT CAPACITANCE