

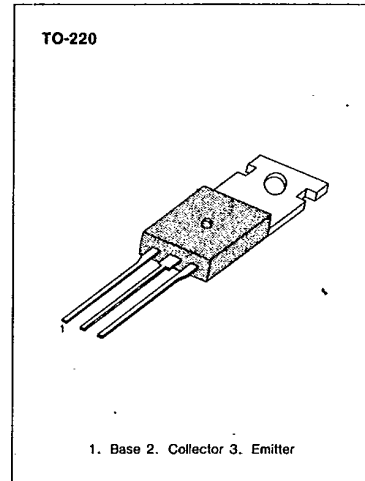
**KSC2335****NPN EPITAXIAL SILICON TRANSISTOR**

**HIGH SPEED, HIGH VOLTAGE SWITCHING  
INDUSTRIAL USE**

**ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C)**

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V <sub>CB0</sub>	500	V
Collector-Emitter Voltage	V <sub>CE0</sub>	400	V
Emitter-Base Voltage	V <sub>EB0</sub>	7	V
Collector Current (DC)	I <sub>C</sub>	7	A
*Collector Current (Pulse)	I <sub>C</sub>	15	A
Base Current (DC)	I <sub>B</sub>	3.5	A
Collector Dissipation (T <sub>a</sub> =25°C)	P <sub>C</sub>	1.5	W
Collector Dissipation (T <sub>c</sub> =25°C)	P <sub>C</sub>	40	W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55~150	°C

\* PW≤300μs, Duty Cycle ≤10%



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**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C)**

Characteristic	Symbol	Test Condition	Min	Max	Unit
Collector Emitter Sustaining Voltage	V <sub>CEO</sub> (sus)	I <sub>C</sub> =3A, I <sub>B1</sub> =0.6A, L=1mH	400		V
Collector Emitter Sustaining Voltage	V <sub>CEX</sub> (sus)1	I <sub>C</sub> =3A, I <sub>B1</sub> =-I <sub>B2</sub> =0.6A	450		V
Collector Emitter Sustaining Voltage	V <sub>CEX</sub> (sus)2	V <sub>BE</sub> (off)=-5V, L=180μH, Clamped I <sub>C</sub> =6A, I <sub>B1</sub> =2A, I <sub>B2</sub> =-0.6A	400		V
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> =400V, I <sub>E</sub> =0		10	μA
Collector Cutoff Current	I <sub>CE1</sub>	V <sub>CE</sub> =400V, R <sub>BE</sub> =51Ω, T <sub>a</sub> =125°C		1	mA
Collector Cutoff Current	I <sub>CEX1</sub>	V <sub>CE</sub> =400V, V <sub>BE</sub> (off)=-1.5V		10	μA
Collector Cutoff Current	I <sub>CEX2</sub>	V <sub>CE</sub> =400V, V <sub>BE</sub> (off)=-1.5V T <sub>a</sub> =125°C		1	mA
Emitter Cutoff Current	I <sub>EB0</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0		10	μA
*DC Current Gain	h <sub>FE1</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =0.1A	20	80	
	h <sub>FE2</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =1A	20	80	
	h <sub>FE3</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =3A	10		
*Collector-Emitter Saturation Voltage	V <sub>CE</sub> (sat)	I <sub>C</sub> =3A, I <sub>B</sub> =0.6A		1	V
*Base-Emitter Saturation Voltage	V <sub>BE</sub> (sat)	I <sub>C</sub> =3A, I <sub>B</sub> =0.6A		1.2	V
Turn On Time	t <sub>on</sub>	I <sub>C</sub> =3A, R <sub>L</sub> =50Ω		1	μs
Storage Time	t <sub>s</sub>	I <sub>B1</sub> =-I <sub>B2</sub> =0.6A, V <sub>CC</sub> =150V		2.5	μs
Fall Time	t <sub>f</sub>			1	μs

\*Pulse Test: PW≤350μs, Duty Cycle≤2% Pulsed

**h<sub>FE</sub> (2) CLASSIFICATION**

Classification	R	O	Y
h <sub>FE</sub> (2)	20-40	30-60	40-80



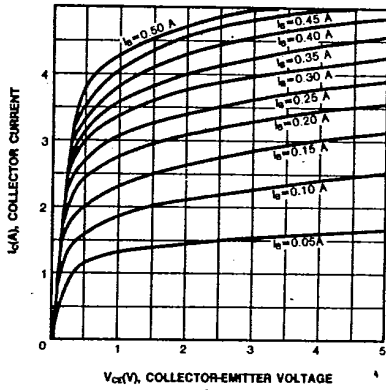
SAMSUNG SEMICONDUCTOR

KSC2335

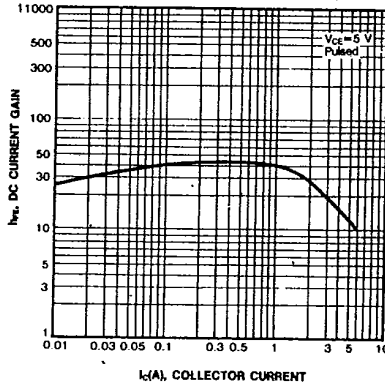
NPN EPITAXIAL SILICON TRANSISTOR

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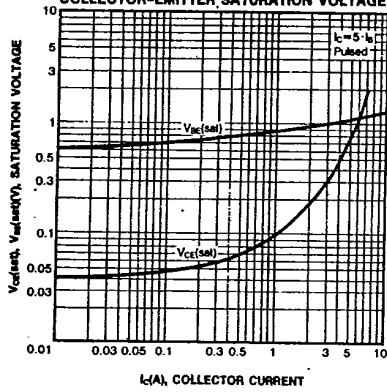
STATIC CHARACTERISTIC



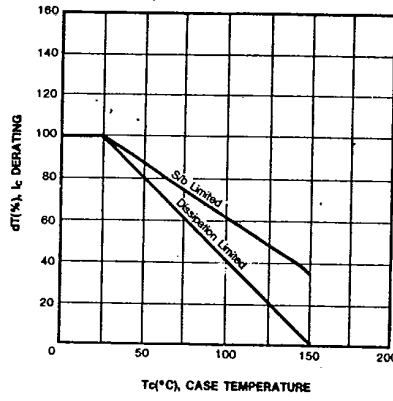
DC CURRENT GAIN



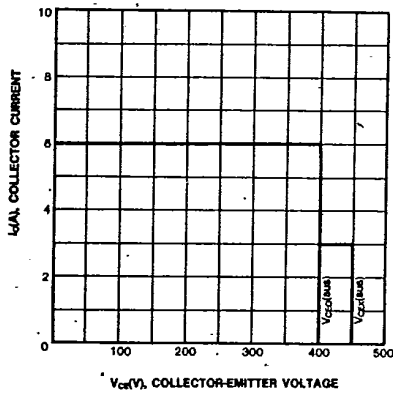
BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE



DERATING CURVE OF SAFE OPERATING AREAS



REVERSE BIAS SAFE OPERATING AREA



SAFE OPERATING AREA

