Silicon NPN Transistor

KSC5030 / C5030

1100V / 6A

DATASHEET

OEM – Samsung

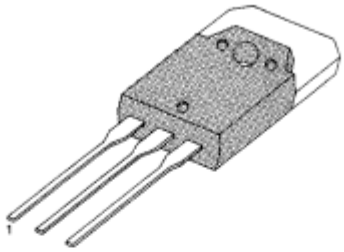
Source: Samsung CD 1995

Datasheet Rev. 1.3 – 04/19 – data without warranty / liability

HIGH VOLTAGE AND HIGH RELIABILITY

HIGH SPEED SWITCHING
WIDE SOA

TO-3P



1. Base 2. Collector 3. Emitter

ABSOLUTE MAXIMUM RATINGS (T_a=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	1100	V
Collector-Emitter Voltage	V_{CEO}	800	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current (DC)	I_C	6	A
Collector Current (Pulse)	I_C	20	A
Base Current	I_B	3	A
Collector Dissipation	P_C	100	W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	−55~150	°C

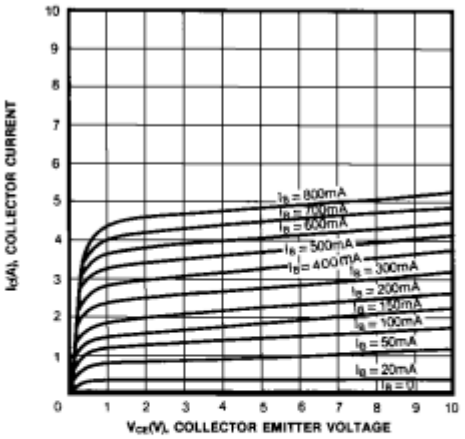
ELECTRICAL CHARACTERISTICS (T_a=25°C)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Base Breakdown Voltage	BV_{CBO}	I_C=1mA, I_E=0	1100			V
Collector Emitter Breakdown Voltage	BV_{CEO}	I_C=5mA, R_{BE}=∞	800			V
Emitter Base Breakdown Voltage	BV_{EBO}	I_E=1mA, I_C=0	7			V
Collector Emitter Sustaining Voltage	V_{CEX}(sus)	I_C=3A, I_{B1}=−I_{B2}=0.6A L=1mH, Clamped	800			V
Collector Cutoff Current	I_{CBO}	V_{CB}=800V, I_E=0			10	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=5V, I_C=0			10	μA
DC Current Gain	h_{FE}1	V_{CE}=5V, I_C=0.4A	10		40	
	h_{FE}2	V_{CE}=5V, I_C=2A	8			
Collector Emitter Saturation Voltage	V_{CE}(sat)	I_C=3A, I_B=0.6A			2	V
Base Emitter Saturation Voltage	V_{BE}(sat)	I_C=3A, I_B=0.6A			1.5	V
Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz		120		pF
Current Gain Bandwidth Product	f_T	V_{CE}=10V, I_C=0.4A		15		MHz
Trun On Time	t_{on}	V_{CC}=400V			0.5	μS
Storage Time	t_S	5I_{B1}=−2.5I_{B2}=I_C=4A			3	μS
Fall Time	t_f	RL=100Ω			0.3	μS

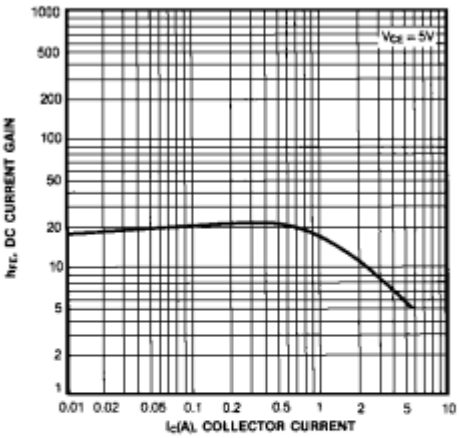
h_{FE} (1) CLASSIFICATION

Classification	N	R	O
h_{FE} 1	10-20	15-30	20-40

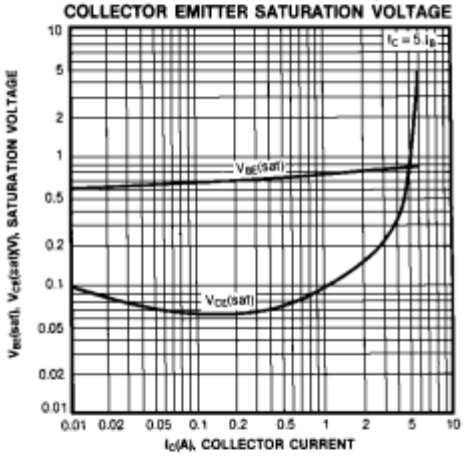
STATIC CHARACTERISTIC



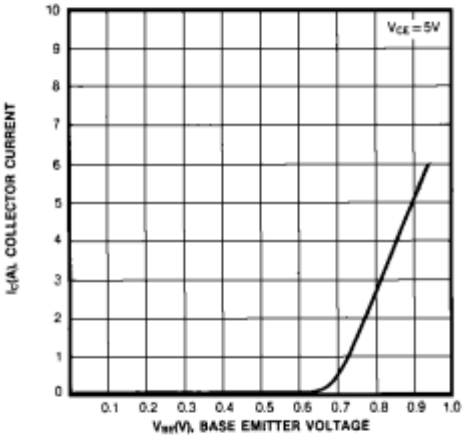
DC CURRENT GAIN



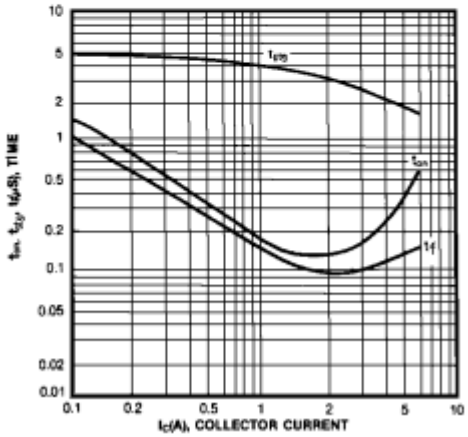
BASE EMITTER SATURATION VOLTAGE
COLLECTOR EMITTER SATURATION VOLTAGE



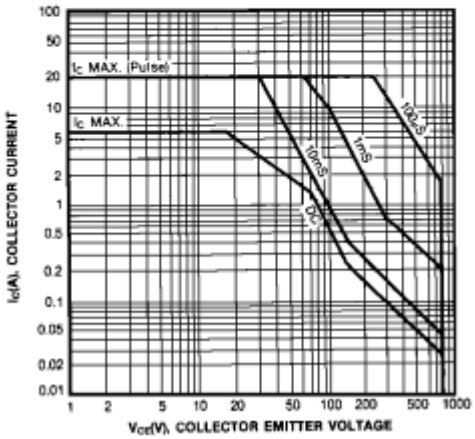
BASE EMITTER ON VOLTAGE

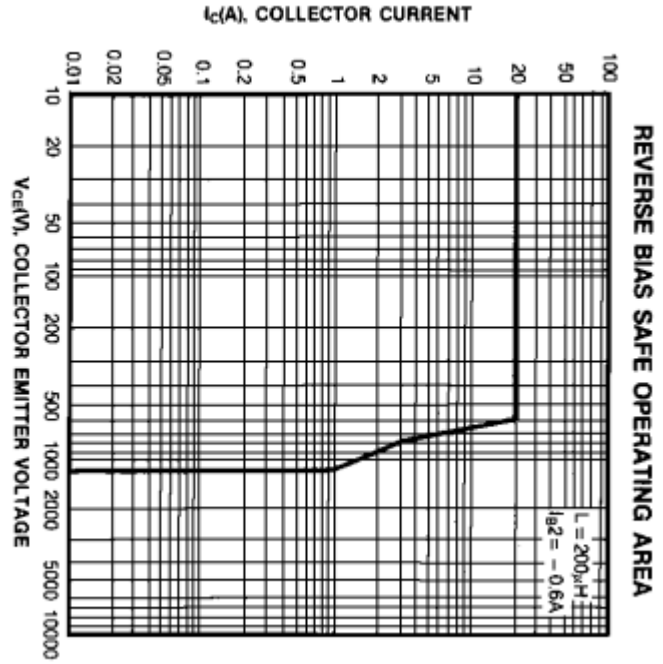


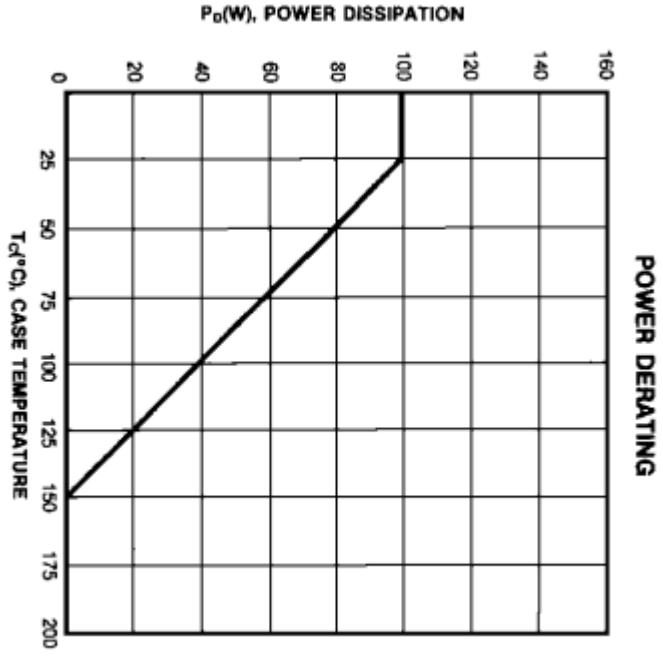
SWITCHING TIME



SAFE OPERATING AREA




REVERSE BIAS SAFE OPERATING AREA
I_C(A), COLLECTOR CURRENT
V_{CE}(V), COLLECTOR EMITTER VOLTAGE
L = 200μH
I_{B2} = – 0.6A


POWER DERATING
P_D(W), POWER DISSIPATION
T_C(°C), CASE TEMPERATURE