

**Low Saturation**

- $V_{CE(sat)}=0.5V$  at  $I_C=2A$ ,  $I_B=50mA$



**NPN Epitaxial Silicon Transistor**

**Absolute Maximum Ratings**  $T_a=25^\circ C$  unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	30	V
$V_{CES}$	Collector-Emitter Voltage	30	V
$V_{CEO}$	Collector-Emitter Voltage	10	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current (DC)	2	A
$I_{CP}$	* Collector Current (Pulse)	5	A
$I_B$	Base Current	2	A
$P_C$	Collector Power Dissipation	750	mW
$T_J$	Junction Temperature	150	$^\circ C$
$T_{STG}$	Storage Temperature	-55 ~ 150	$^\circ C$

\*  $PW \leq 10ms$ , Duty Cycles  $\leq 30\%$

**Electrical Characteristics**  $T_a=25^\circ C$  unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$I_{CBO}$	Collector Cut-off Current	$V_{CB}=30V, I_E=0$			100	nA
$I_{EBO}$	Emitter Cut-off Current	$V_{EB}=6V, I_C=0$			100	nA
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C=10mA, I_B=0$	10			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E=1mA, I_C=0$	6			V
$h_{FE1}$	DC Current Gain	$V_{CE}=1V, I_C=0.5A$	140		600	
$h_{FE2}$		$V_{CE}=1V, I_C=2A$	70	200		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=2A, I_B=50mA$		0.2	0.5	V
$V_{BE(on)}$	Base Emitter On Voltage	$V_{CE}=1V, I_C=2A$		0.86	1.5	V
$f_T$	Current Gain Bandwidth Product	$V_{CE}=1V, I_C=0.5A$		150		MHz
$C_{ob}$	Output Capacitance	$V_{CB}=10V, I_E=0, f=1MHz$		27		pF

**$h_{FE}$  Classification**

Classification	L	M	N	P
$h_{FE}$	140 ~ 240	200 ~ 330	300 ~ 450	420 ~ 600

# Typical Characteristics

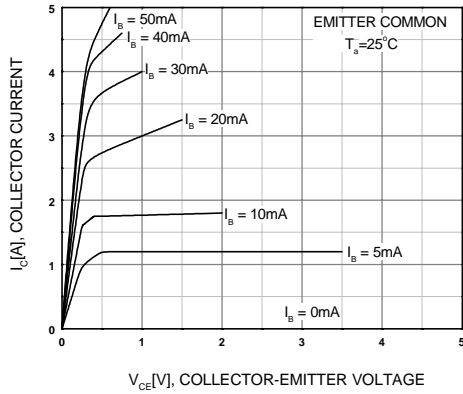


Figure 1. Static Characteristic

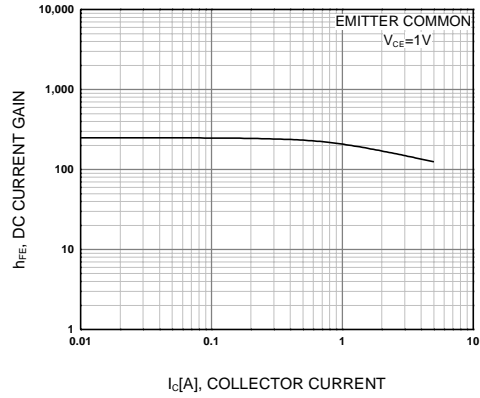


Figure 2. DC current Gain

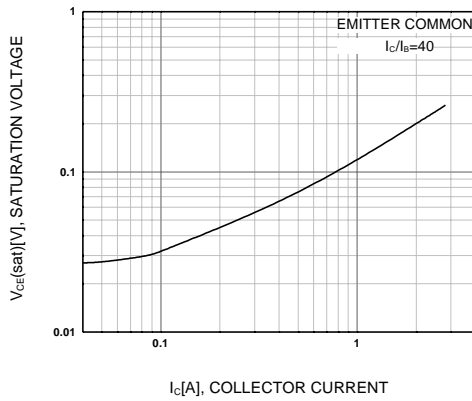


Figure 3. Collector-Emitter Saturation Voltage

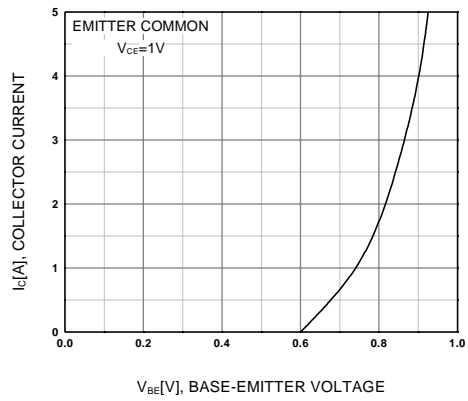


Figure 4. Base-Emitter On Voltage

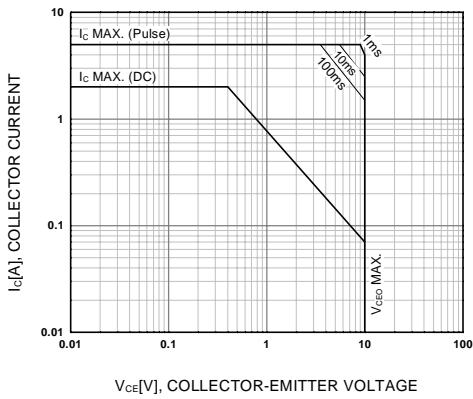


Figure 5. Safe Operating Area

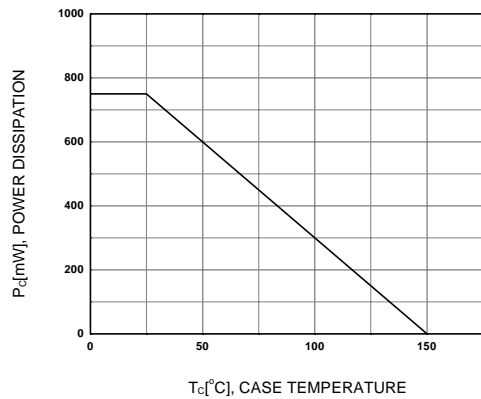


Figure 6. Power Derating

# Package Dimensions

KSC5019

## TO-92



Dimensions in Millimeters

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