

SEMICONDUCTOR
TECHNICAL DATA

KN3903

EPITAXIAL PLANAR NPN TRANSISTOR

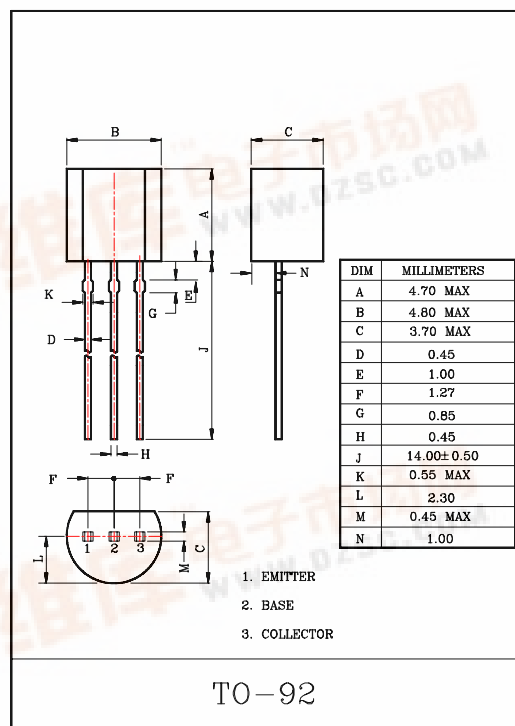
GENERAL PURPOSE APPLICATION.
SWITCHING APPLICATION.

FEATURES

- Low Leakage Current
: $I_{CEX}=50\text{nA}(\text{Max.})$, @ $V_{CE}=30\text{V}$, $V_{EB}=3\text{V}$.
- Low Saturation Voltage
: $V_{CE(\text{sat})}=0.3\text{V}(\text{Max.})$ @ $I_C=50\text{mA}$, $I_B=5\text{mA}$.
- Complementary to KN3905.

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

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	200	mA
Base Current	I_B	50	mA
Collector Power Dissipation	P_C	625	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-55\sim 150$	$^\circ\text{C}$



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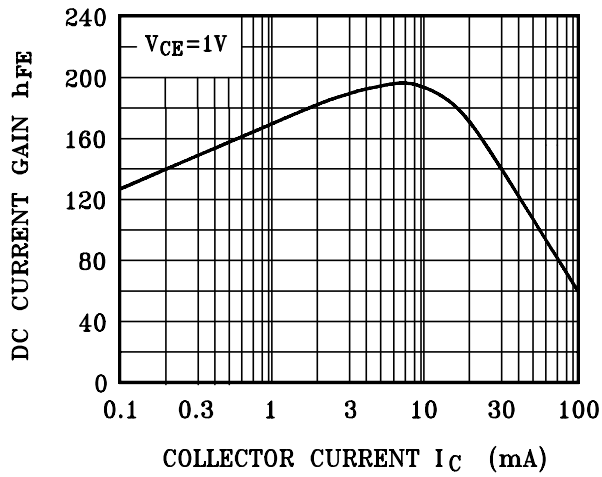
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CEX}	$V_{CE}=30V, V_{EB}=3V$	–	–	50	nA
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	60	–	–	V
Collector-Emitter Breakdown Voltage *	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	40	–	–	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	6	–	–	V
DC Current Gain *	$h_{FE}(1)$	$V_{CE}=1V, I_C=0.1mA$	20	–	–	
	$h_{FE}(2)$	$V_{CE}=1V, I_C=1mA$	35	–	–	
	$h_{FE}(3)$	$V_{CE}=1V, I_C=10mA$	50	–	150	
	$h_{FE}(4)$	$V_{CE}=1V, I_C=50mA$	30	–	–	
	$h_{FE}(5)$	$V_{CE}=1V, I_C=100mA$	15	–	–	
Collector-Emitter Saturation Voltage *	$V_{CE(sat)1}$	$I_C=10mA, I_B=1mA$	–	–	0.2	V
	$V_{CE(sat)2}$	$I_C=50mA, I_B=5mA$	–	–	0.3	
Base-Emitter Saturation Voltage *	$V_{BE(sat)1}$	$I_C=10mA, I_B=1mA$	0.65	–	0.85	V
	$V_{BE(sat)2}$	$I_C=50mA, I_B=5mA$	–	–	0.95	
Transition Frequency	f_T	$V_{CE}=20V, I_C=10mA, f=100MHz$	–	300	–	MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=5V, I_E=0, f=1MHz$	–	–	4.0	pF

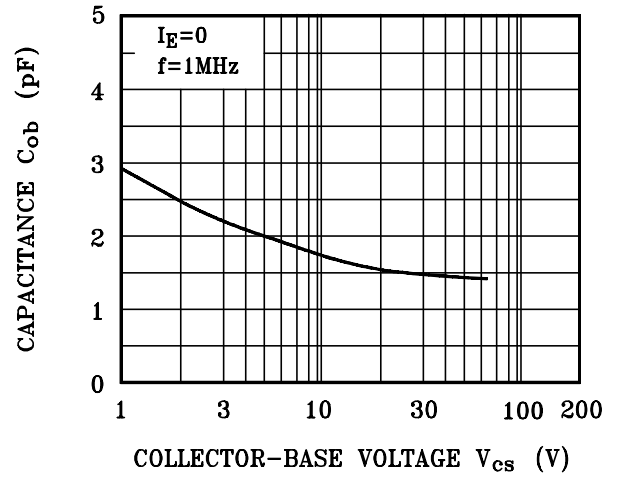
*Pulse Test : Pulse Width $\leq 300\mu S$, Duty Cycle $\leq 2\%$

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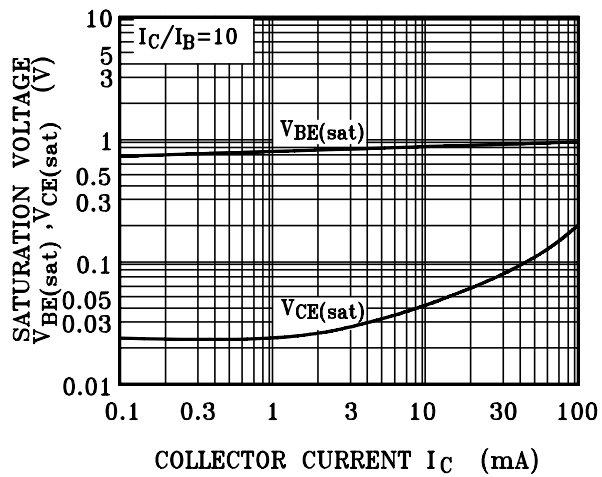
$h_{FE} - I_C$



$C_{ob} - V_{CB}$



$V_{BE(sat)}, V_{CE(sat)} - I_C$



$P_C - T_a$

