

## SEMICONDUCTOR TECHNICAL DATA

## KN2222/A EPITAXIAL PLANAR NPN TRANSISTOR

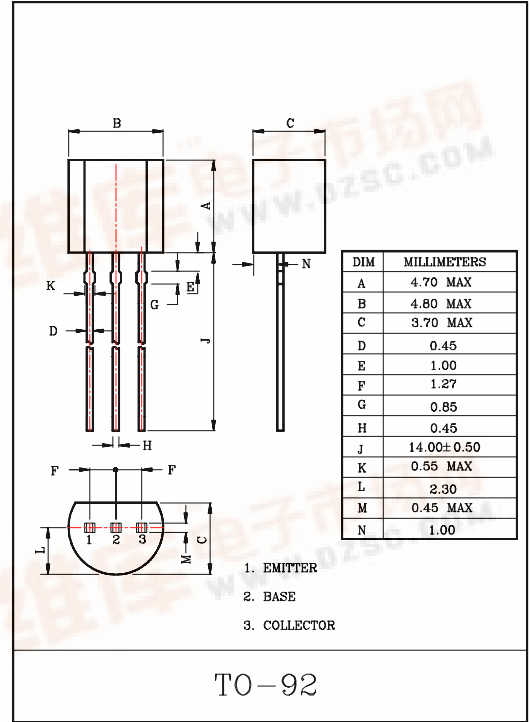
GENERAL PURPOSE APPLICATION,  
SWITCHING APPLICATION.

### FEATURES

- Low Leakage Current  
:  $I_{CEX}=10\text{nA}(\text{Max.})$ ;  $V_{CE}=60\text{V}$ ,  $V_{EB(\text{OFF})}=3\text{V}$ .
- Low Saturation Voltage  
:  $V_{CE(\text{sat})}=0.3\text{V}(\text{Max.})$ ;  $I_C=150\text{mA}$ ,  $I_B=15\text{mA}$ .
- Complementary to the KN2907/2907A.

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

CHARACTERISTIC	SYMBOL	RATING		UNIT
		KN2222	KN2222A	
Collector-Base Voltage	$V_{CBO}$	60	75	V
Collector-Emitter Voltage	$V_{CEO}$	30	40	V
Emitter-Base Voltage	$V_{EBO}$	5	6	V
Collector Current	$I_C$	600		mA
Collector Power Dissipation ( $T_a=25^\circ\text{C}$ )	$P_C$	625		mW
Junction Temperature	$T_j$	150		$^\circ\text{C}$
Storage Temperature Range	$T_{\text{stg}}$	-55~150		$^\circ\text{C}$



# KN2222/A

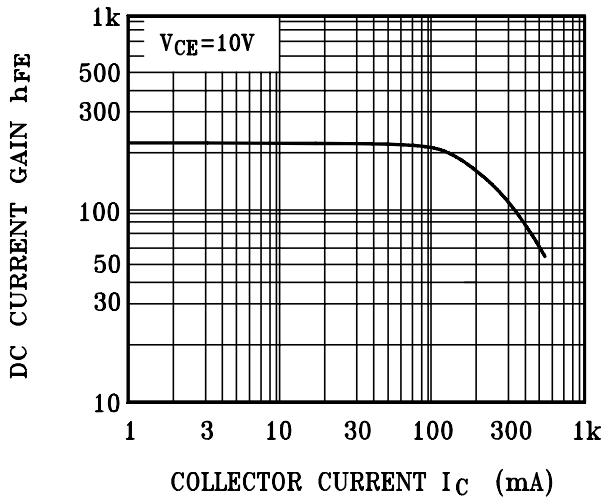
## ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	KN2222A	$I_{CEX}$	$V_{CE}=60V, V_{EB(OFF)}=3V$	-	-	10	nA
Collector Cut-off Current	KN2222	$I_{CBO}$	$V_{CB}=50V, I_E=0$	-	-	10	nA
	KN2222A		$V_{CB}=60V, I_E=0$	-	-	10	
Emitter Cut-off Current	KN2222A	$I_{EBO}$	$V_{EB}=3V, I_C=0$	-	-	10	nA
Collector-Base Breakdown Voltage	KN2222	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	60	-	-	V
	KN2222A			75	-	-	
Collector-Emitter Breakdown Voltage *	KN2222	$V_{(BR)CEO}$	$I_E=10mA, I_B=0$	30	-	-	V
	KN2222A			40	-	-	
Emitter-Base Breakdown Voltage	KN2222	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	5	-	-	V
	KN2222A			6	-	-	
DC Current Gain *	KN2222 KN2222A	$h_{FE(1)}$	$I_C=0.1mA, V_{CE}=10V$	35	-	-	
		$h_{FE(2)}$	$I_C=1mA, V_{CE}=10V$	50	-	-	
		$h_{FE(3)}$	$I_C=10mA, V_{CE}=10V$	75	-	-	
		$h_{FE(4)}$	$I_C=150mA, V_{CE}=10V$	100	-	300	
	KN2222 KN2222A	$h_{FE(5)}$	$I_C=500mA, V_{CE}=10V$	30	-	-	
				40	-	-	
Collector-Emitter Saturation Voltage *	KN2222	$V_{CE(sat)1}$	$I_C=150mA, I_B=15mA$	-	-	0.4	V
	KN2222A			-	-	0.3	
	KN2222	$V_{CE(sat)2}$	$I_C=500mA, I_B=50mA$	-	-	1.6	
	KN2222A			-	-	1.0	
Base-Emitter Saturation Voltage *	KN2222	$V_{BE(sat)1}$	$I_C=150mA, I_B=15mA$	-	-	1.3	V
	KN2222A			0.6	-	1.2	
	KN2222	$V_{BE(sat)2}$	$I_C=500mA, I_B=50mA$	-	-	2.6	
	KN2222A			-	-	2.0	
Transition Frequency	KN2222	$f_T$	$I_C=20mA, V_{CE}=20V$ $f=100MHz$	250	-	-	MHz
	KN2222A			300	-	-	
Collector Output Capacitance		$C_{ob}$	$V_{CB}=10V, I_E=0, f=1.0MHz$	-	-	8	pF

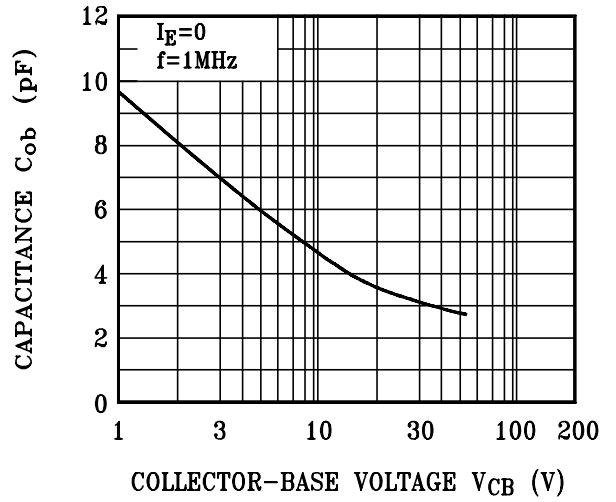
\*Pulse Test : Pulse Width  $\leq 300\mu S$ , Duty Cycle  $\leq 2.0\%$

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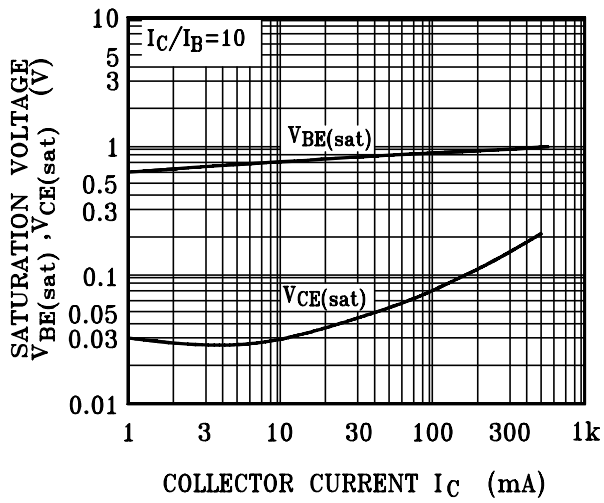
$h_{FE} - I_C$



$C_{ob} - V_{CB}$



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



$P_C - T_a$

