

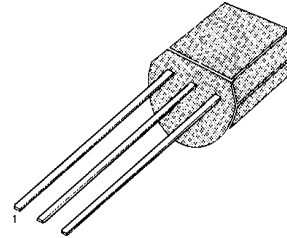
KSP42/43

NPN EPITAXIAL SILICON TRANSISTOR

HIGH VOLTAGE TRANSISTOR

- Collector-Emitter Voltage: V_{CE0} =KSP42: 300V
KSP43: 200V
- Collector Dissipation: $P_C(\text{max})=625\text{mW}$

TO-92



1. Emitter 2. Base 3. Collector

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

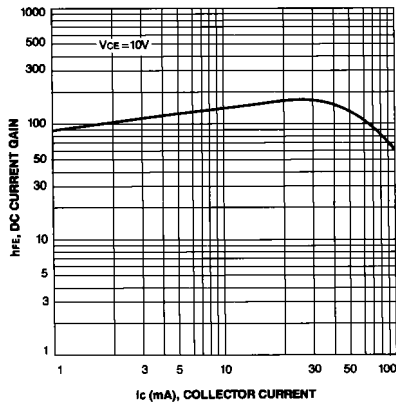
Characteristic	Symbol	Rating	Unit
Collector Base Voltage	V_{CB0}	300	V
: KST42		200	V
: KST43			
Collector-Emitter Voltage	V_{CE0}	300	V
: KST42		200	V
: KST43			
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	500	mA
Collector Dissipation	P_C	625	mW
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	357	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$)

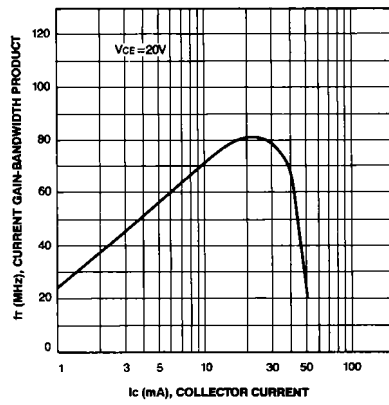
Characteristic	Symbol	Test Conditions	Min	Max	Unit
Collector-Base Breakdown Voltage	BV_{CB0}	$I_C=100\mu\text{A}, I_E=0$	300		V
: KST42			200		V
: KST43					
*Collector -Emitter Breakdown Voltage	BV_{CE0}	$I_C=1\text{mA}, I_B=0$	300		V
: KST42			200		V
: KST43					
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=100\mu\text{A}, I_C=0$	6		V
Collector Cut-off Current	I_{CBO}	$V_{CB}=200\text{V}, I_E=0$		100	nA
: KST42		$V_{CB}=160\text{V}, I_E=0$		100	nA
: KST43					
Emitter Cut-off Current	I_{EBO}	$V_{BE}=6\text{V}, I_C=0$		100	nA
: KST42		$V_{BE}=4\text{V}, I_C=0$		100	nA
: KST43					
*DC Current Gain	h_{FE}	$V_{CE}=10\text{V}, I_C=1\text{mA}$	25		
		$V_{CE}=10\text{V}, I_C=10\text{mA}$	40		
		$V_{CE}=10\text{V}, I_C=30\text{mA}$	40		
*Collector-Emitter Saturation Voltage	$V_{CE}(\text{sat})$	$I_C=20\text{mA}, I_B=2\text{mA}$		0.5	V
*Base-Emitter Saturation Voltage	$V_{BE}(\text{sat})$	$I_C=20\text{mA}, I_B=2\text{mA}$		0.9	V
Collector-Base Capacitance	C_{CB}	$V_{CB}=20\text{V}, I_E=0$		3	pF
: KST42		$f=1\text{MHz}$		4	pF
: KST43					
Current Gain Bandwidth Product	f_T	$V_{CE}=20\text{V}, I_C=10\text{mA}$	50		MHz
		$f=100\text{MHz}$			

* Pulse Test: $PW \leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

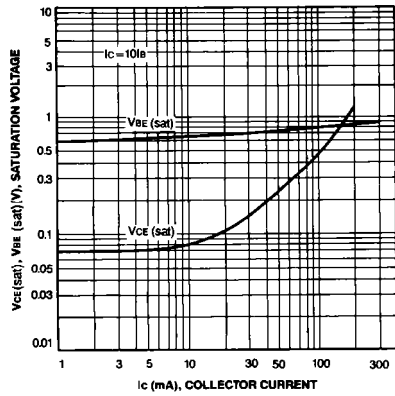
DC CURRENT GAIN



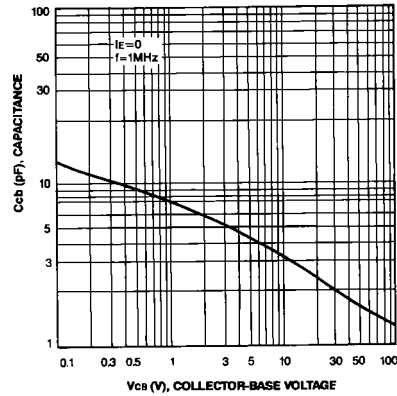
CURRENT GAIN-BANDWIDTH PRODUCT



COLLECTOR-EMITTER SATURATION VOLTAGE
BASE-EMITTER SATURATION VOLTAGE



COLLECTOR-BASE CAPACITANCE



TRADEMARKS

The following are registered and unregistered trademarks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACEx™	ISOPLANAR™	UHC™
CoolFET™	MICROWIRE™	VCX™
CROSSVOLT™	POP™	
E ² CMOS™	PowerTrench™	
FACT™	QST™	
FACT Quiet Series™	Quiet Series™	
FAST®	SuperSOT™-3	
FASTr™	SuperSOT™-6	
GTO™	SuperSOT™-8	
HiSeC™	TinyLogic™	

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.