

NPN Epitaxial Silicon Darlington Transistor

KSP13

Features

• Collector-Emitter Voltage: V_{CES}=30 V

• Collector Power Dissipation: P_C (max)=625 mW

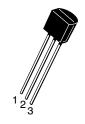
• These are Pb-Free Devices

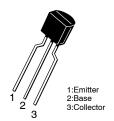
ABSOLUTE MAXIMUM RATINGS

 $(T_A = 25^{\circ}C \text{ unless otherwise noted})$

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	30	V
V _{CES}	Collector-Emitter Voltage	30	٧
V _{EBO}	Emitter-Base Voltage	10	V
I _C	Collector Current	500	mA
PC	Collector Power Dissipation	625	mW
T _J	Junction Temperature	150	°C
T _{STG}	Storage Temperature	-55 to 150	°C

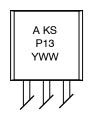
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.





TO-92 3 CASE 135AN TO-92 3 LF CASE 135AR

MARKING DIAGRAM



A = Assembly Code KSP13 = Device Code Y = Year WW = Work Week

ELECTRICAL CHARACTERISTICS ($T_C = 25^{\circ}C$ unless otherwise noted.)

Symbol	Parameter	Test Condition	Min	Max	Unit
BV _{CES}	Collector-Emitter Breakdown Voltage	$I_C = 100 \mu A, I_B = 0$	30	-	V
I _{CBO}	Collector Cut-off Current	$V_{CB} = 30 \text{ V}, I_{E} = 0$	-	100	nA
I _{EBO}	Emitter Cut-off Current	V _{EB} = 10 V, I _C = 0	-	100	nA
h _{FE}	DC Current Gain (Note 1)	V_{CE} = 5 V, I_{C} = 10 mA	5k	-	
		$V_{CE} = 5 \text{ V}, I_{C} = 100 \text{ mA}$	10k	-	
V _{CE} (sat)	Collector-Emitter Saturation Voltage	I _C = 100 mA, I _B = 0.1 mA	-	1.5	V
V _{BE} (on)	Base-Emitter On Voltage	V _{CE} = 5 V, I _C = 100 mA	-	2.0	V
f _T	Current Gain Bandwidth Product	V _{CE} = 5 V, I _C = 10 mA f = 100 MHz	125	-	MHz

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

1. Pulse Test: Pulse Width \leq 300 μ s, Duty Cycle \leq 2%.

ORDERING INFORMATION

Device	Package	Shipping
KSP13BU	TO-92 3 (Pb-Free)	10000 / Bulk Bag
KSP13TA	TO-92 3 LF (Pb-Free)	2000 / Fan–Fold

KSP13

TYPICAL CHARACTERISTICS

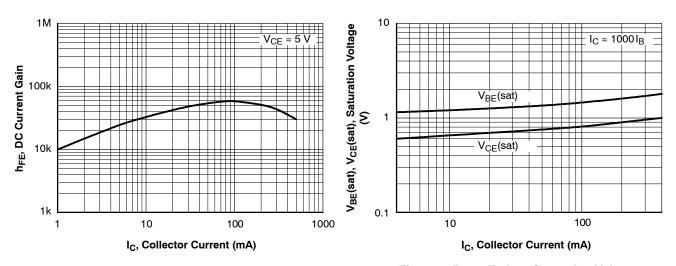


Figure 1. DC Current Gain



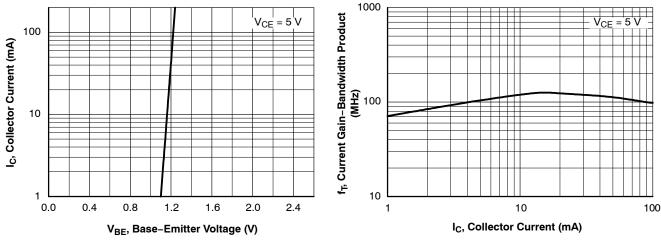


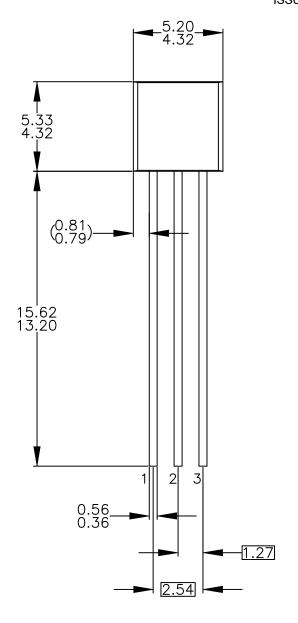
Figure 3. Base-Emitter On Voltage

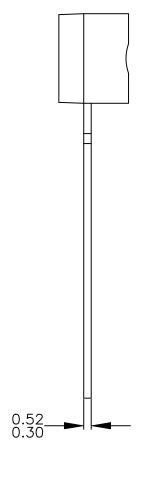
Figure 4. Current Gain Bandwidth Product



TO-92 3 4.825x4.76 CASE 135AN ISSUE O

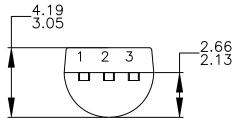
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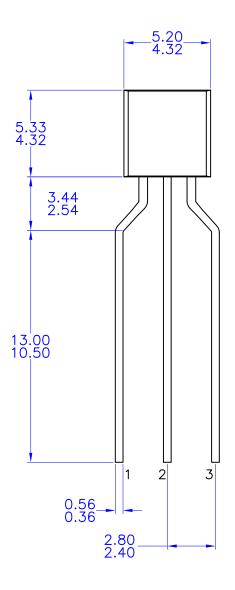
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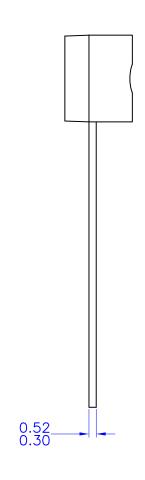


TO-92 3 4.83x4.76 LEADFORMED

CASE 135AR ISSUE O

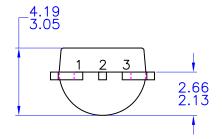
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