

# KSD5041

KSD5041

## AF Output Amplifier for Electronic Flash Unit

- Low Collector-Emitter Saturation Voltage
- High Performance at Low Supply Voltage



## NPN Epitaxial Silicon Transistor

### Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Ratings	Units
$V_{CBO}$	Collector-Base Voltage	40	V
$V_{CEO}$	Collector-Emitter Voltage	20	V
$V_{EBO}$	Emitter-Base Voltage	7	V
$I_C$	Collector Current	5	A
$P_C$	Collector Power Dissipation	0.75	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

### Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C=1\text{mA}, I_B=0$	20			V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_C=10\mu\text{A}, I_E=0$	7			V
$I_{CBO}$	Collector Cut-off Current	$V_{CB}=10\text{V}, I_E=0$			0.1	$\mu\text{A}$
$I_{EBO}$	Emitter Cut-off Current	$V_{EB}=7\text{V}, I_C=0$			0.1	$\mu\text{A}$
$h_{FE1}$ $h_{FE2}$	DC Current Gain	$V_{CE}=2\text{V}, I_C=0.5\text{A}$ $V_{CE}=2\text{V}, I_C=2\text{A}$	180 150		600	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=3\text{A}, I_B=0.1\text{A}$			1	V
$f_T$	Current Gain Bandwidth Product	$V_{CE}=6\text{V}, I_C=50\text{mA}$		150		MHz
$C_{ob}$	Output Capacitance	$V_{CB}=20\text{V}, I_E=0, f=1\text{MHz}$			50	pF

### $h_{FE}$ Classification

Classification	P	Q	R
$h_{FE}$	180 ~ 270	230 ~ 380	340 ~ 600

# Typical Characteristics

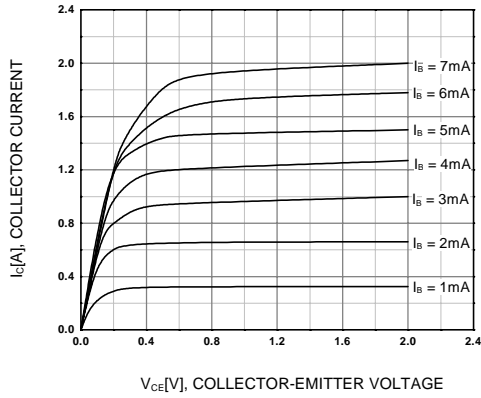


Figure 1. Static Characteristic

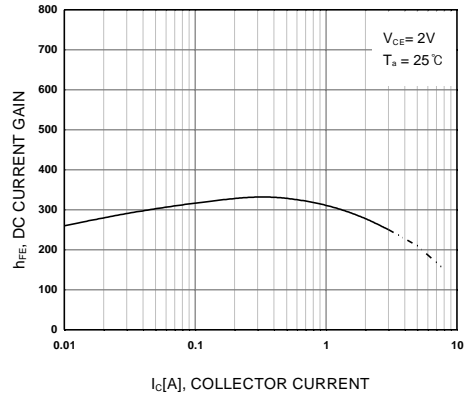


Figure 2. DC current Gain

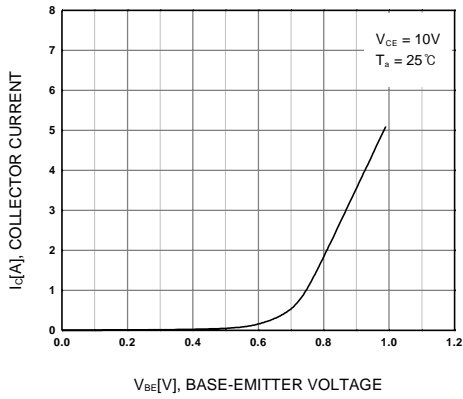


Figure 3. Base-Emitter Saturation Voltage

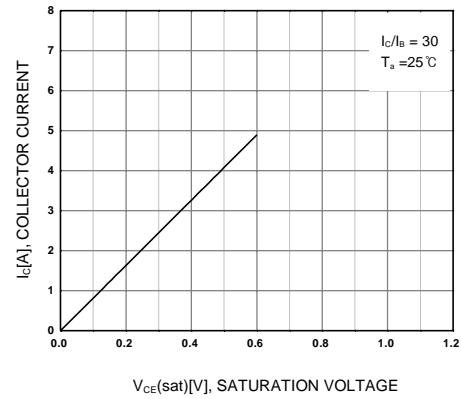


Figure 4. Collector-Emitter Saturation Voltage

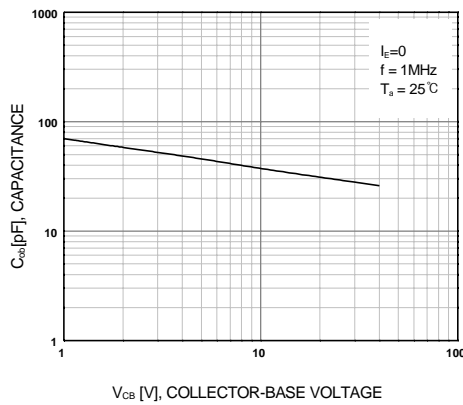


Figure 5. Collector Output Capacitance

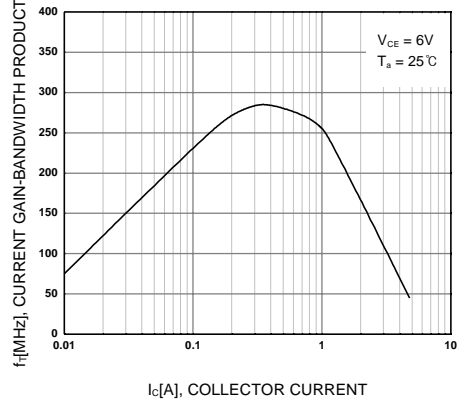


Figure 6. Current Gain Bandwidth Product

# Typical Characteristics (Continued)

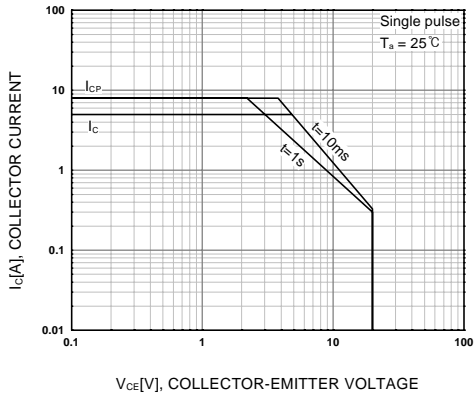


Figure 7. Safe Operating Area

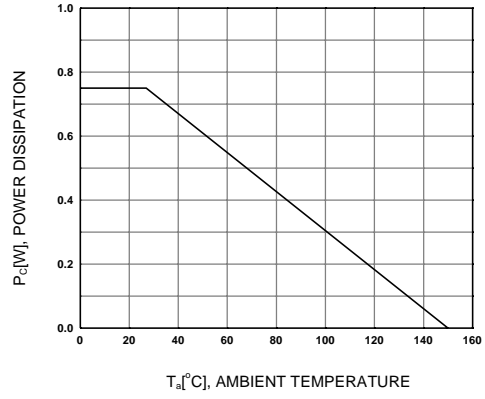


Figure 8. Power Derating

# Package Dimensions

## TO-92



Dimensions in Millimeters

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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.
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KSD5041

NPN Epitaxial Silicon Transistor

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Applications

**Af Output Amplifier for Electronic Flash Unit**

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Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Leads	Packing method
KSD5041PBU	Full Production	\$0.073	<a href="#">TO-92</a>	3	BULK
KSD5041QTA	Full Production	\$0.073	<a href="#">TO-92</a>	3	TAPE REEL
KSD5041RBU	Full Production	\$0.073	<a href="#">TO-92</a>	3	BULK
KSD5041PTA	Full Production	\$0.073	<a href="#">TO-92</a>	3	TAPE REEL
KSD5041QBU	Full Production	\$0.073	<a href="#">TO-92</a>	3	BULK
KSD5041RTA	Full Production	\$0.073	<a href="#">TO-92</a>	3	TAPE REEL

\* 1,000 piece Budgetary Pricing

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