



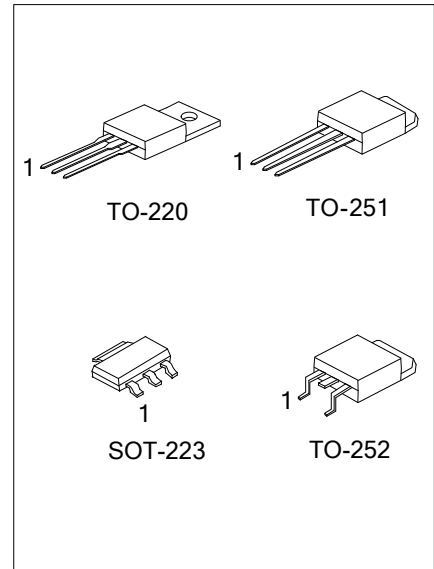
HJ45H11

PNP SILICON TRANSISTOR

PNP EPITAXIAL PLANAR TRANSISTOR

DESCRIPTION

The **HJ45H11** is designed for various specific and general purpose applications, such as: output and driver stages of amplifiers operating at frequencies from DC to greater than 1MHz; series, shunt and switching regulators; low and high frequency inverters/converters; and many others.



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
HJ45H11L-AA3-R	HJ45H11G-AA3-R	SOT-223	B	C	E	Tape Reel
HJ45H11L-TA3-T	HJ45H11G-TA3-T	TO-220	B	C	E	Tube
HJ45H11L-TM3-T	HJ45H11G-TM3-T	TO-251	B	C	E	Tube
HJ45H11L-TN3-R	HJ45H11G-TN3-R	TO-252	B	C	E	Tape Reel
HJ45H11L-TN3-T	HJ45H11G-TN3-T	TO-252	B	C	E	Tube

Note: Pin Assignment: B: Base C: Case E: Emitter

<p>HJ45H11G-AA3-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel, T: Tube (2) AA3: SOT-223, TA3: TO-220, TM3: TO-251 TN3: TO-252 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING

SOT-223	TO-220 / TO-251 / TO-252
<p>HJ45H11 □ □ □ □ □ □ 1</p> <p>L: Lead Free G: Halogen Free Date Code</p>	<p>UTC HJ45H11 □ □ □ □ □ □ 1</p> <p>Lot Code ← L: Lead Free G: Halogen Free Date Code</p>

■ **ABSOLUTE MAXIMUM RATINGS** ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector- Emitter Voltage		V_{CEO}	-80	V
Collector-Emitter Voltage		V_{CES}	-80	V
Emitter-Base Voltage		V_{EBO}	-5	V
Collector Current		I_C	-10	A
Base Current		I_B	-5	A
Power Dissipation ($T_C=25^{\circ}\text{C}$)	SOT-223	P_D	5	W
	TO-220		65	W
	TO-251		20	W
	TO-252			
Junction Temperature		T_J	-40 ~ +150	$^{\circ}\text{C}$
Storage Temperature		T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ **THERMAL DATA**

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Case (Note)	SOT-223	θ_{JC}	25	$^{\circ}\text{C/W}$
	TO-220		1.92	$^{\circ}\text{C/W}$
	TO-251		6.25	$^{\circ}\text{C/W}$
	TO-252			

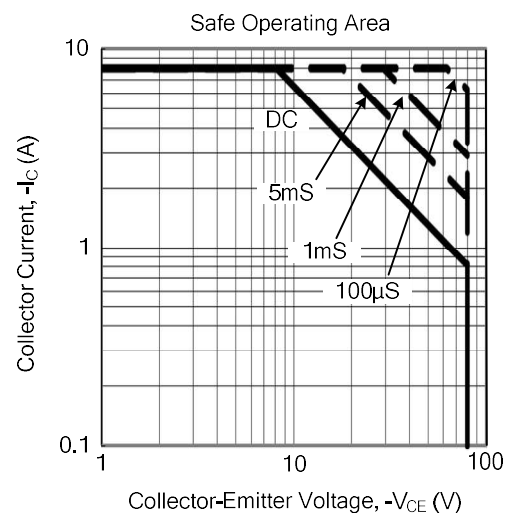
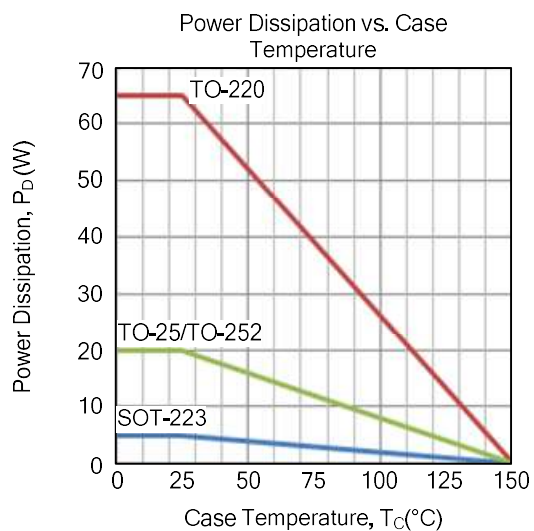
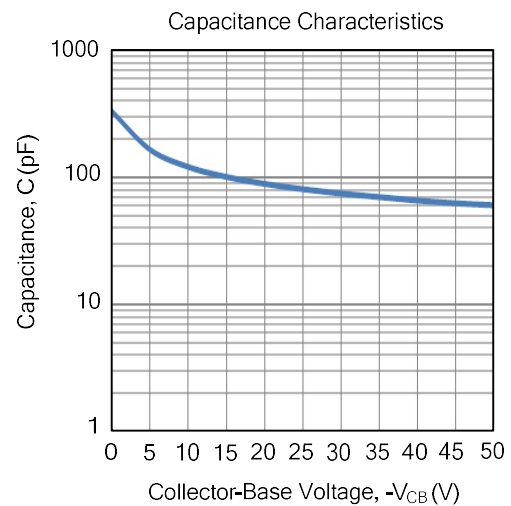
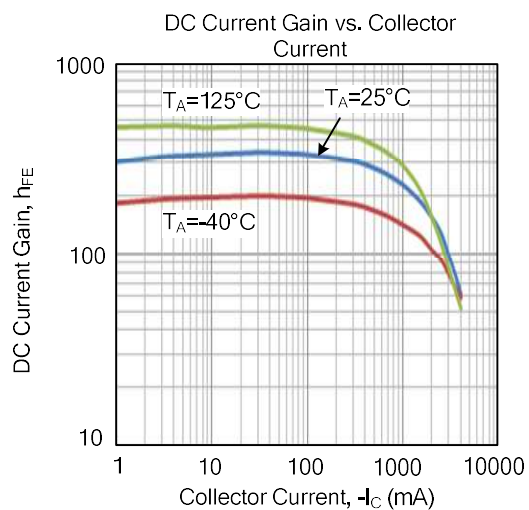
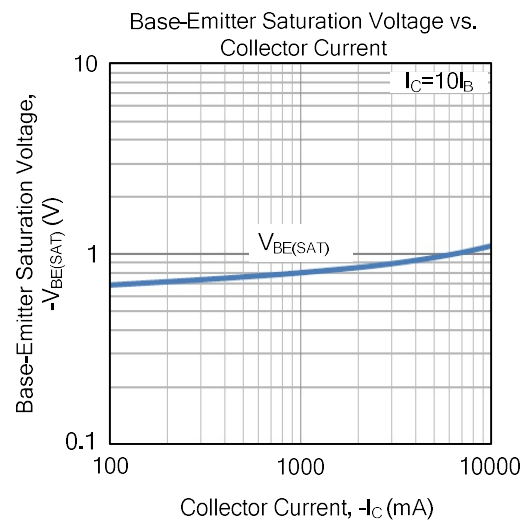
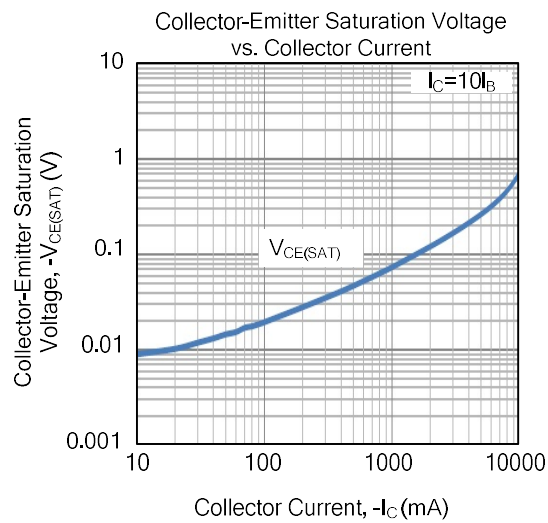
Note: Device mounted on FR-4 substrate P_C board, 2oz copper, with 1inch square copper plate.

■ **ELECTRICAL CHARACTERISTICS** ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=-30\text{mA}$, $I_B=0$	-80			V
Collector-Emitter Breakdown Voltage	BV_{CES}	$I_C=-1\text{mA}$, $I_B=0$	-80			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=-1\text{mA}$, $I_C=0$	-5			V
Collector Cut-off Current	I_{CBO}	$V_{CB}=-80\text{V}$, $V_{EB}=0$			-1	μA
Collector Cut-Off Current	I_{CES}	$V_{CE}=-80\text{V}$, $V_{EB}=0$			-1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=-5\text{V}$, $I_C=0$			-1	μA
Collector-Emitter Saturation Voltage(Note)	$V_{CE(SAT)}$	$I_C=-8\text{A}$, $I_B=-0.8\text{A}$			-1	V
Base-Emitter Saturation Voltage(Note)	$V_{BE(SAT)}$	$I_C=-8\text{A}$, $I_B=-0.8\text{A}$			-1.5	V
DC Current Gain (Note)	h_{FE1}	$V_{CE}=-1\text{V}$, $I_C=-2\text{A}$	60			
	h_{FE2}	$V_{CE}=-1\text{V}$, $I_C=-4\text{A}$	40			
Output Capacitance	C_{OB}	$V_{CB}=-10\text{V}$		120		pF
Transition Frequency	f_T	$V_{CE}=10\text{V}$, $I_C=500\text{mA}$, $f=20\text{MHz}$		50		MHz
Delay and Rise Times	$t_D + t_R$	$I_C=-5.0\text{A}$, $I_{B1}=-0.5\text{A}$		33		ns
Storage Time	t_S	$I_C=-5.0\text{A}$, $I_{B1}=I_{B2}=-0.5\text{A}$		1720		ns
Fall Time	t_F			150		ns

Note: Pulse Test: Pulse Width $\leq 380\mu\text{s}$, Duty Cycle $\leq 2\%$.

■ TYPICAL CHARACTERISTICS



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