



L13022

NPN SILICON TRANSISTOR

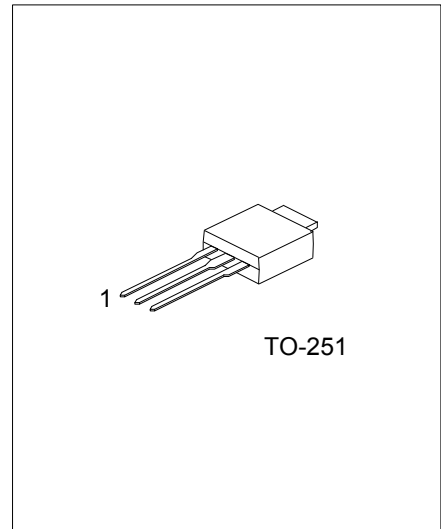
NPN TRIPLE DIFFUSED PLANAR TYPE HIGH VOLTAGE TRANSISTOR

DESCRIPTION

The UTC **L13022** is a medium power transistor designed for use in switching applications.

FEATURES

- * High breakdown voltage
- * Low collector saturation voltage
- * Fast switching speed



Lead-free: L13022L
Halogen-free : L13022G

ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free	Halogen Free		1	2	3	
L13022-TM3-T	L13022L-TM3-T	L13022G-TM3-T	TO-251	B	C	E	Tube

<p>L13022L-TM3-T</p>	<p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Plating</p>	<p>(1) T: Tube</p> <p>(2) TM3: TO-251</p> <p>(3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn</p>
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■ ABSOLUTE MAXIMUM RATING ($T_A=25^\circ\text{C}$)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V_{CBO}	600	V
Collector-Emitter Voltage		V_{CEO}	400	V
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current	DC	I_C	800	mA
	Pulse		1600	
Base Current	DC	I_B	100	mA
	Pulse		200	
Total Power Dissipation ($T_C=25^\circ\text{C}$)		P_D	20	W
Junction Temperature		T_J	150	$^\circ\text{C}$
Storage Temperature		T_{STG}	-40 ~ +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.

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

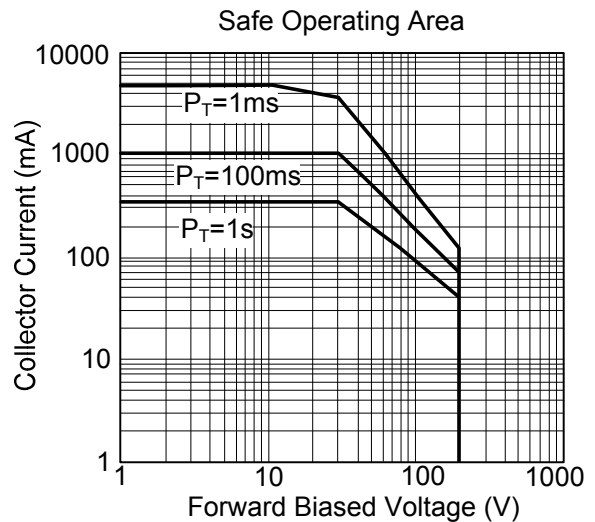
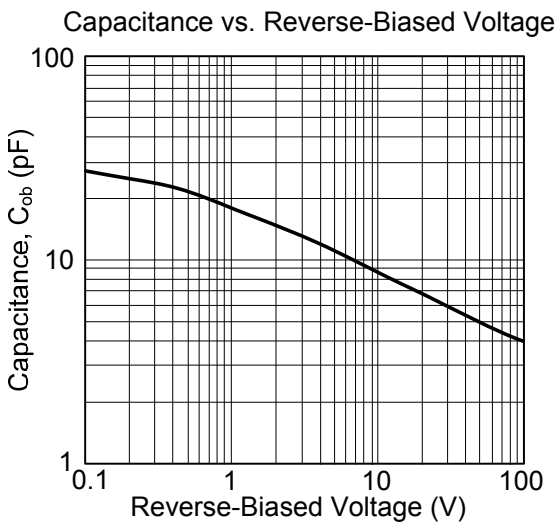
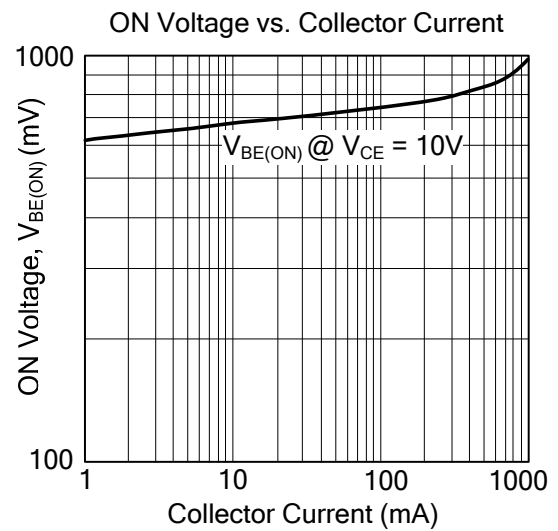
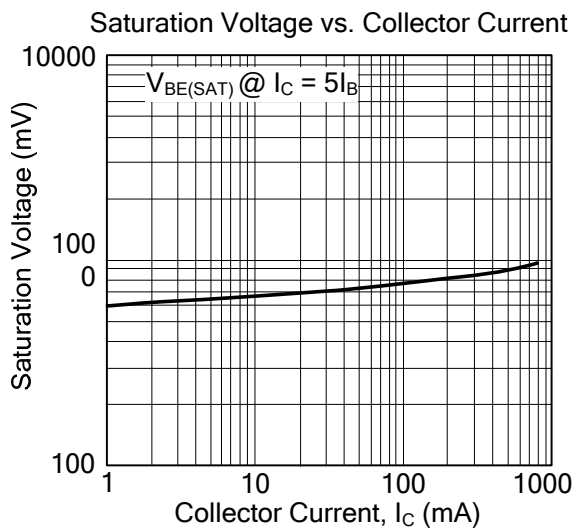
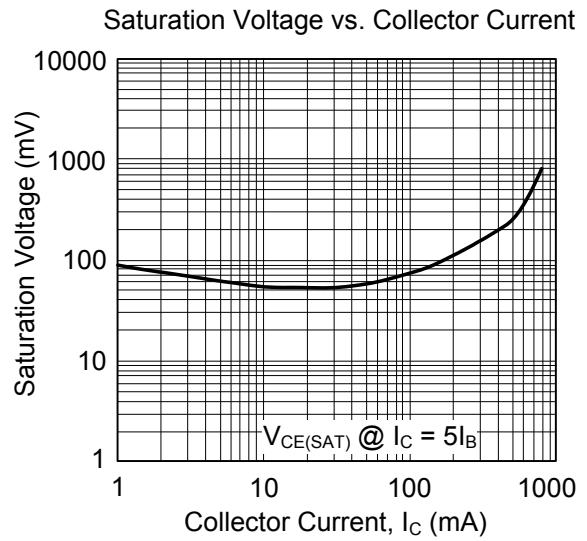
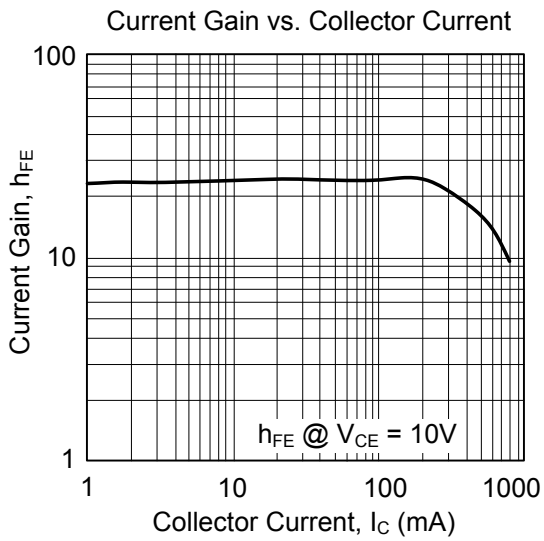
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=100\mu\text{A}$	600			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=10\text{mA}$	400			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=10\mu\text{A}$	6			V
Collector Cutoff Current	I_{CBO}	$V_{CB}=600\text{V}$			10	μA
Collector Cutoff Current	I_{CEO}	$V_{CB}=400\text{V}$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=6\text{V}$			10	μA
ON CHARACTERISTICS						
DC Current Gain(Note)	h_{FE1}	$V_{CE}=10\text{V}, I_C=0.1\text{A}$	10		40	
	h_{FE2}	$V_{CE}=10\text{V}, I_C=0.5\text{A}$	10			
Collector-Emitter Saturation Voltage (Note)	$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=20\text{mA}$			400	mV
		$I_C=300\text{mA}, I_B=60\text{mA}$			800	
Base-Emitter Saturation Voltage (Note)	$V_{BE(SAT)}$	$I_C=100\text{mA}, I_B=20\text{mA}$			1	V
SWITCHING CHARACTERISTICS						
Fall Time	t_F	$V_{CC}=100\text{V}, I_C=0.3\text{A},$ $I_{B1}=-I_{B2}=0.06\text{A}$			0.6	μS

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

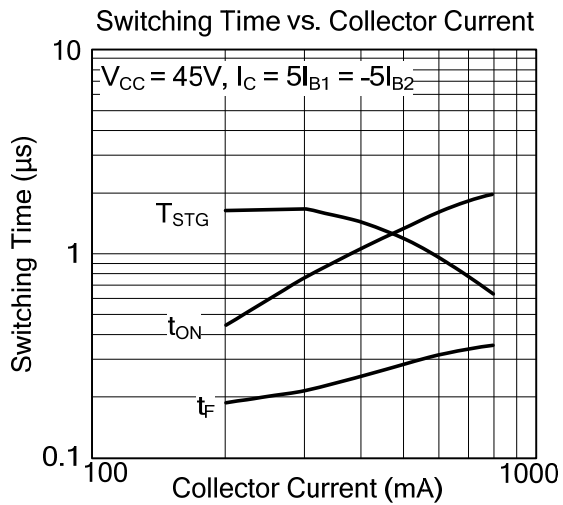
■ CLASSIFICATION OF h_{FE1}

RANK	B1	B2	B3	B4	B5	B6
Range	10 ~ 17	13 ~ 22	18 ~ 27	23 ~ 32	28 ~ 37	33 ~ 40

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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