



BU931

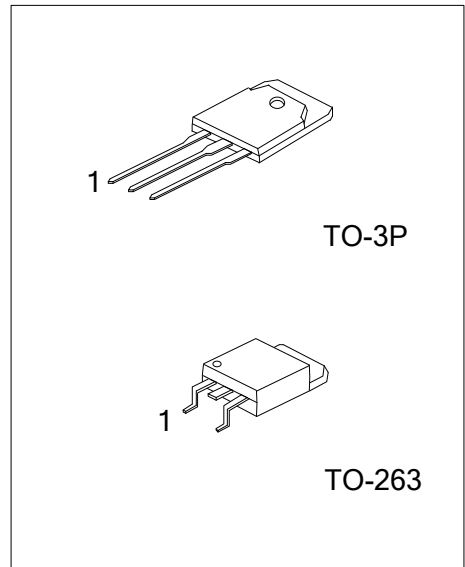
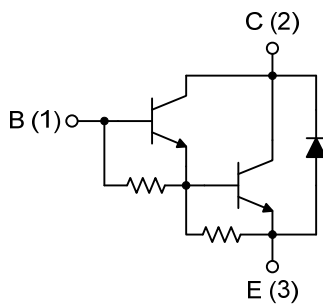
NPN SILICON TRANSISTOR

NPN POWER DARLINGTON

■ **FEATURES**

- * High operating junction temperature
- * High voltage ignition coil driver
- * Very rugged bipolar technology

■ **INTERNAL SCHEMATIC DIAGRAM**



■ **ORDERING INFORMATION**

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BU931L-T3P-T	BU931G-T3P-T	TO-3P	B	C	E	Tube
BU931L-TQ2-T	BU931G-TQ2-T	TO-263	B	C	E	Tube
BU931L-TQ2-R	BU931G-TQ2-R	TO-263	B	C	E	Tape Reel

<p>BU931L-T3P-T</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Plating</p>	<p>(1) T: Tube, R: Tape Reel</p> <p>(2) T3P: TO-3P, TQ2: TO-263</p> <p>(3) L: Lead Free, G: Halogen Free</p>
---	--

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Emitter Voltage (V _{BE} =0)		V _{CES}	500	V
Collector-Emitter Voltage (I _B =0)		V _{CEO}	400	V
Emitter-Base Voltage (I _C =0)		V _{EBO}	5	V
Collector Current		I _C	15	A
Collector Peak Current		I _{CM}	30	A
Base Current		I _B	1	A
Base Peak Current		I _{BM}	5	A
Power Dissipation (T _C =25°C)	TO-3P	P _D	135	W
	TO-263		125	W
Junction Temperature		T _J	+200	°C
Storage Temperature		T _{STG}	-65 ~ +200	°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

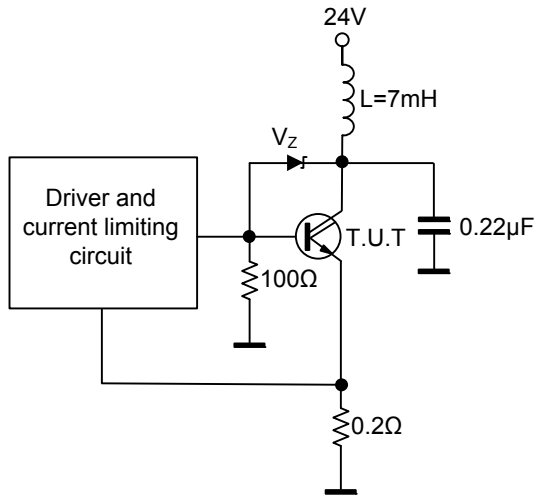
PARAMETER		SYMBOL	RATING	UNIT
Junction to Case	TO-3P	θ _{JC}	1.1	°C/W
	TO-263		1.2	°C/W

■ ELECTRICAL CHARACTERISTICS

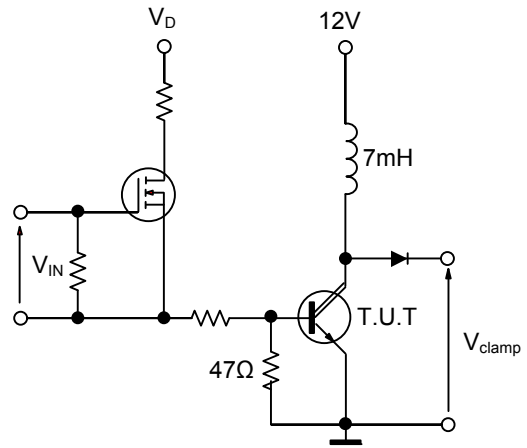
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cut-off Current (I _B =0)	I _{CEO}	V _{CE} = 450 V			100	μA
		V _{CE} = 450V, T _J = 125°C			0.5	mA
Emitter Cut-off Current (I _C =0)	I _{EBO}	V _{EB} = 5V			20	mA
Collector-Emitter Saturation Voltage (Note)	V _{CE(SAT)}	I _C = 7A, I _B = 70mA			1.6	V
		I _C = 8A, I _B = 100mA			1.8	V
		I _C = 10A, I _B = 250mA			1.8	V
Base-Emitter Saturation Voltage (Note)	V _{BE(SAT)}	I _C = 7A, I _B = 70mA			2.2	V
		I _C = 8A, I _B = 100mA			2.4	V
		I _C = 10A, I _B = 250mA			2.5	V
DC Current Gain	h _{FE}	I _C = 5A, V _{CE} = 10V	300			
Diode Forward Voltage	V _F	I _F = 10 A			2.5	V
Functional Test		V _{CC} = 24V, V _{clamp} = 400V L = 7mH	8			A
Inductive Load Storage Time / Fall Time	t _S	V _{CC} = 12V, V _{clamp} = 300V L = 7mH		15		μs
	t _F	I _C = 7A, I _B = 70mA V _{BE} = 0, R _{BE} = 47Ω		0.5		μs

Note: Pulsed: Pulse duration = 300μs, duty cycle 1.5 %

■ TEST CIRCUITS

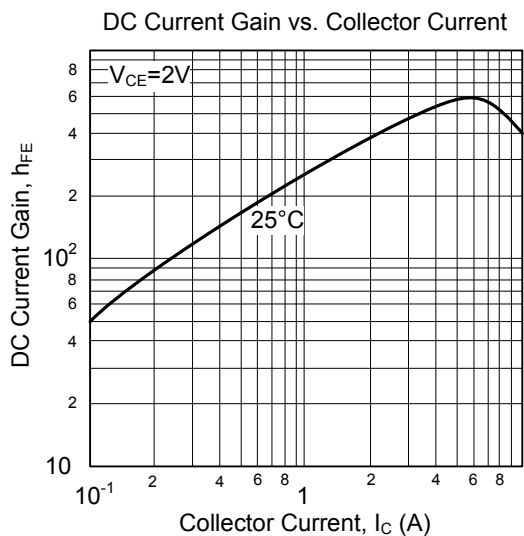
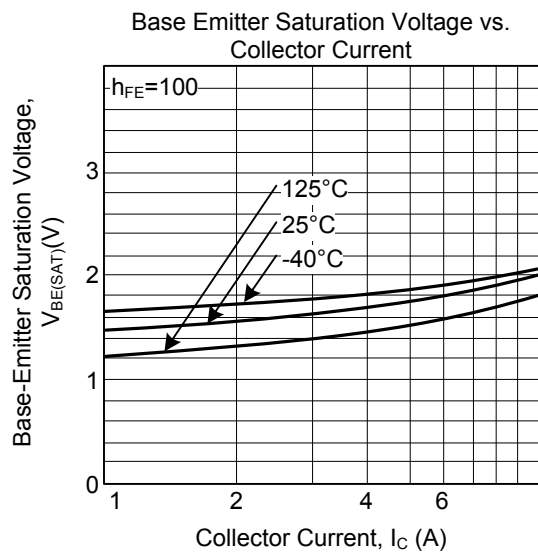
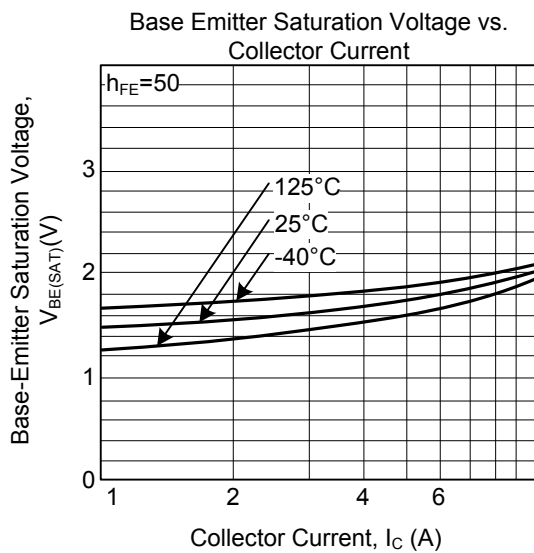
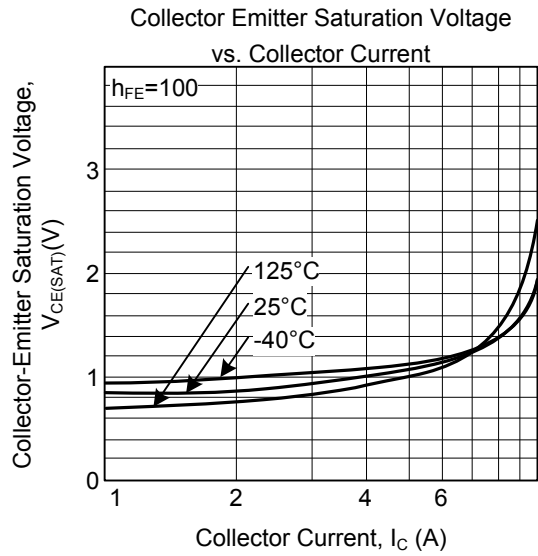
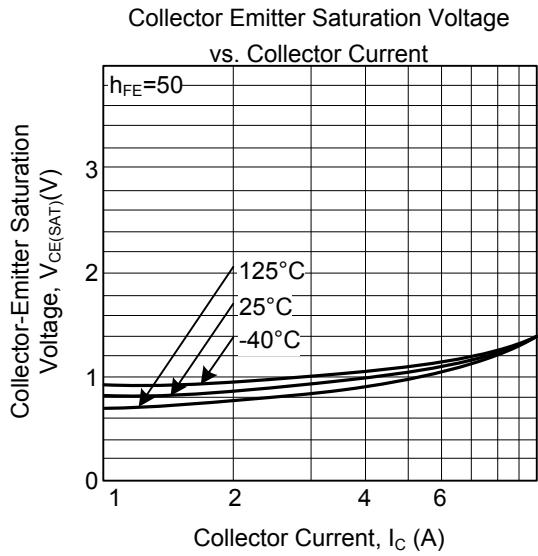


Functional Test Circuit



Switching Time Test Circuit

TYPICAL CHARACTERISTICS



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.