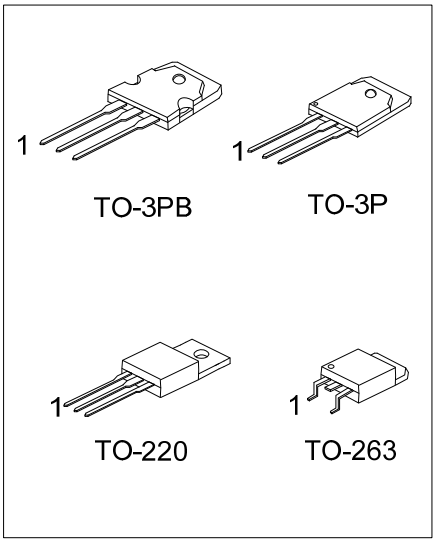
BU941Z

NPN SILICON TRANSISTOR

NPN POWER DARLINGTON HIGH VOLTAGE IGNITION COIL DRIVER



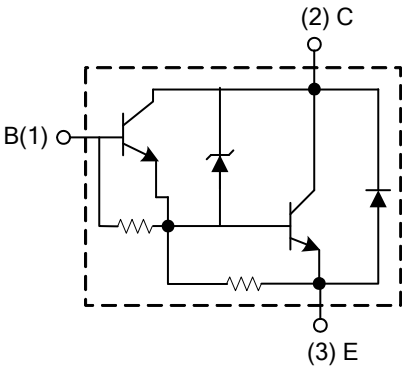
■ FEATURES

* NPN Darlington
* Integrated antiparallel collector-emitter diode

■ APPLICATIONS

* High ruggedness electric ignitions

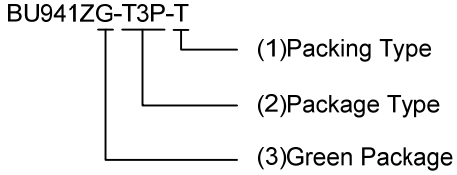
■ INTERNAL SCHEMATIC DIAGRAM



■ ORDERING INFORMATION

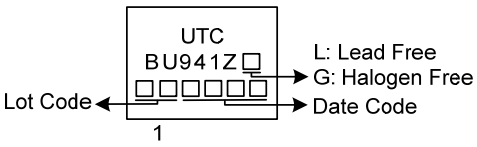
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BU941ZL-T3P-T	BU941ZG-T3P-T	TO-3P	B	C	E	Tube
BU941ZL-T3B-T	BU941ZG-T3B-T	TO-3PB	B	C	E	Tube
BU941ZL-TA3-T	BU941ZG-TA3-T	TO-220	B	C	E	Tube
BU941ZL-TQ2-T	BU941ZG-TQ2-T	TO-263	B	C	E	Tube
BU941ZL-TQ2-R	BU941ZG-TQ2-R	TO-263	B	C	E	Tape Reel

Note: Pin assignment: B: Base C: Collector E: Emitter



(1) T: Tube, R: Tape Reel
(2) T3P: TO-3P, TO-3PB: TO-3PB, TA3: TO-220, TQ2: TO-263
(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Emitter Voltage		V_{CEO}	350	V
Emitter-Base Voltage		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	W
Total Power Dissipation (T_C=25°C)	TO-3P/TO-3PB	P_D	155	W
	TO-220/TO263		150	W
Junction Temperature		T_J	+175	°C
Storage Temperature		T_{STG}	-65 ~ +175	°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 (Tc=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Clamping Voltage	V_{CL}*	I_C=10mA	350		500	V
Collector Cut-Off Current	I_{CEO}	V_{CE}=300V			100	μA
		V_{CE}=300V, T_J=125°C			0.5	mA
Emitter Cut-off Current	I_{EBO}	V_{EB}=5V, I_C=0			20	mA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$*	I_C=8A, I_B=100mA			1.6	V
		I_C=10A, I_B=250mA			1.8	
		I_C=12A, I_B=300mA			2	
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$*	I_C=8A, I_B=100mA			2.2	V
		I_C=10A, I_B=250mA			2.5	
		I_C=12A, I_B=300mA			2.7	
DC Current Gain	h_{FE}*	V_{CE}=10V, I_C=5A	300		2500	
Diode Forward Voltage	V_F	I_F=10A			2.5	V
Functional Test		V_{CC}=24V, V_{CLAMP}=400V, L=7mH (see Functional Test Circuit)	10			A
Fall Time	t_F	V_{CC}=12V, V_{CLAMP}=300V, V_{BE}=0, R_{BE}=47Ω, L=7mH, I_C=7A, I_B=70mA (see Fig.1)		0.5		μs
Storage Time	t_S			15		

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

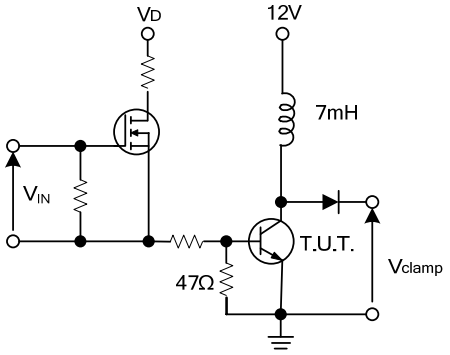
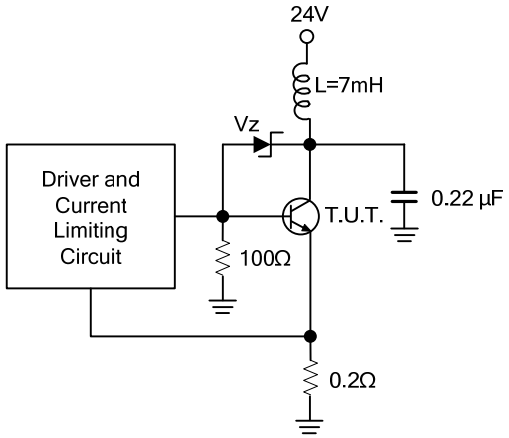
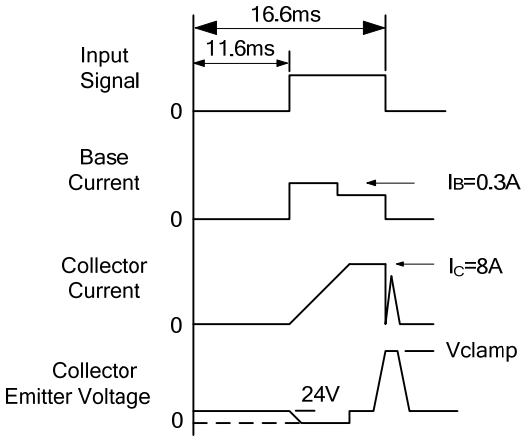


Fig. 1 Switching Time Test Circuit

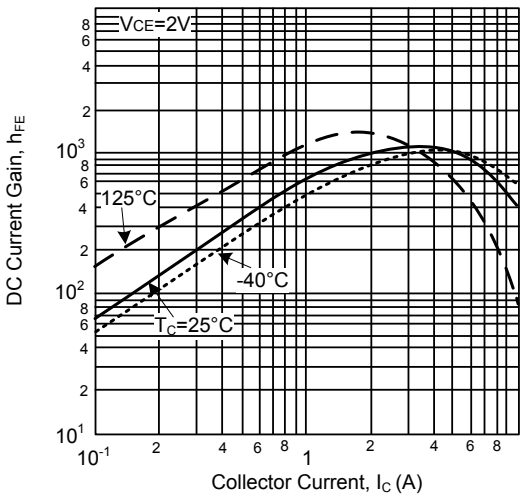
■ FUNCTION TEST CIRCUIT



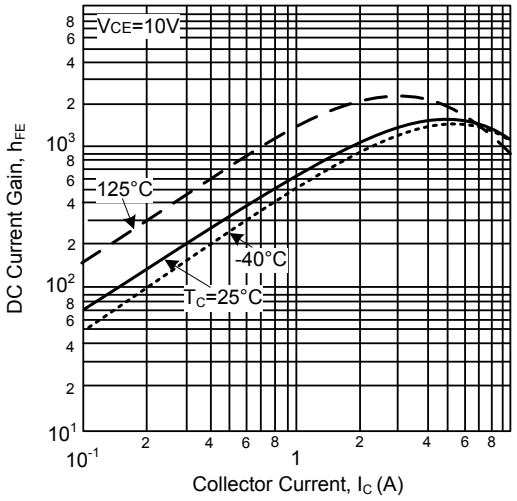


■ TYPICAL CHARACTERISTICS

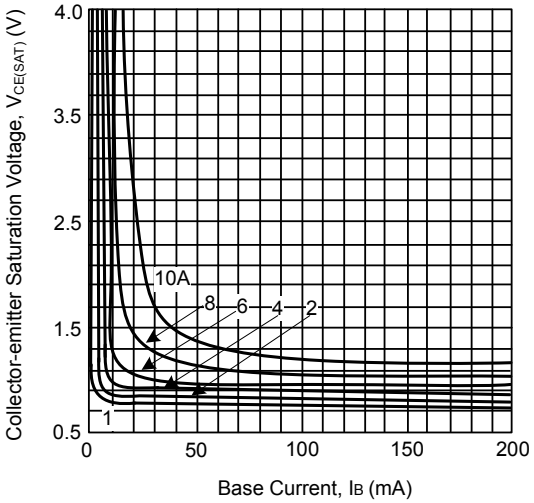
DC Current Gain



DC Current Gain



Collector-Emitter Saturation Voltage



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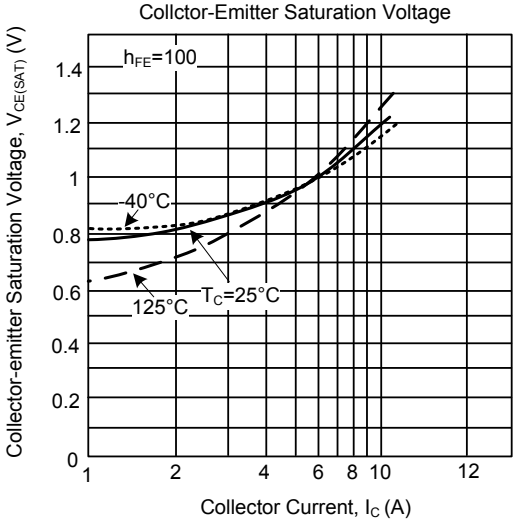
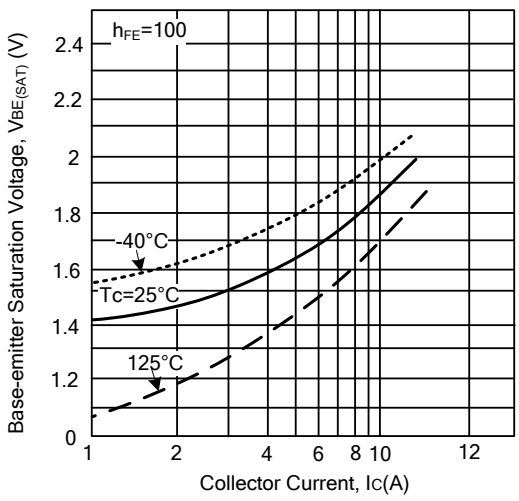
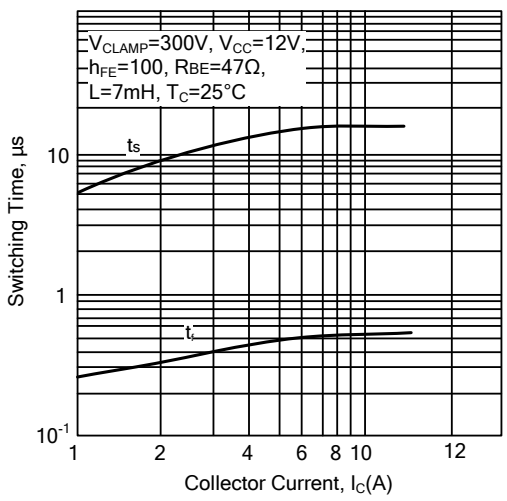


Base-Emitter Saturation Voltage



Switching Time



■ TYPICAL CHARACTERISTICS (Cont.)