



UTN2010Z

Preliminary

NPN EPITAXIAL SILICON TRANSISTOR

60V NPN LOW SATURATION MEDIUM POWER TRANSISTOR

DESCRIPTION

The **UTN2010Z** is an new low saturation 60V NPN transistor offers extremely low on state losses making it ideal for use in DC-DC circuits and various driving and power management functions.

PNP complement: UTP2012Z.

FEATURES

- * 5 amps continuous current
- * Up to 20 amps peak current
- * Very low saturation voltages
- * Excellent hFE characteristics up to 10 amps

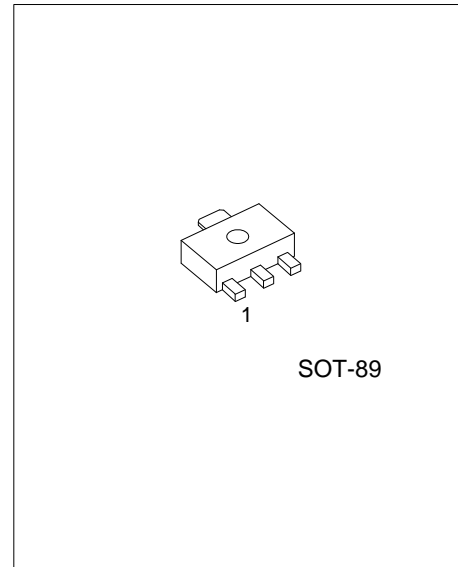
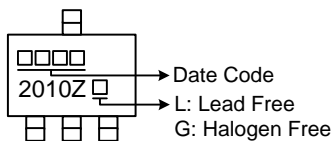
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTN2010ZL-AB3-R	UTN2010ZG-AB3-R	SOT-89	B	C	E	Tape Reel

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

<p>UTN2010ZG-AB3-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) AB3: SOT-89 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING



SOT-89

■ ABSOLUTE MAXIMUM RATINGS (T_A= 25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector to Base Voltage	V _{CBO}	150	V
Collector to Emitter Voltage	V _{CEO}	60	V
Emitter to Base Voltage	V _{EBO}	7	V
Base Current	I _B	2	A
Collector Current	I _C	5	A
Peak Collector Current	I _{CM}	20	A
Collector Dissipation	P _C	1.5	W
Junction Temperature	T _J	+150	°C
Storage Temperature	T _{STG}	-55 ~ +150	°C

Notes: 1. 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.

2. Single pulse, P_W=10ms.

3. Device mounted on FR-4 PCB with minimum recommended pad layout. (25×25×1.6mm)

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ _{JA}	83	°C/W
Junction to Case	θ _{JC}	60	°C/W

■ ELECTRICAL CHARACTERISTICS (T_A= 25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV _{CBO}	I _C =100μA	150			V
Collector-Emitter Breakdown Voltage	BV _{CEO}	I _C =1μA	60			V
Emitter-Base Breakdown Voltage	BV _{EBO}	I _E =100μA	7.0			V
Collector Cutoff Current	I _{CBO}	V _{CB} =120V			20	nA
Emitter Cutoff Current	I _{EBO}	V _{EB} =6V			10	nA
Base Emitter On Voltage (Note)	V _{BE (ON)}	V _{CE} =1V, I _C =6A			1050	mV
Base-Emitter Saturation Voltage (Note)	V _{BE (SAT)}	I _C =6A, I _B =300mA(Note)			1100	mV
Collector-Emitter Saturation Voltage (Note)	V _{CE(SAT)}	I _C =100mA, I _B =5mA			30	mV
		I _C =1A, I _B =100mA			55	mV
		I _C =1A, I _B =50mA			65	mV
		I _C =2A, I _B =50mA			125	mV
		I _C =6A, I _B =300mA			230	mV
DC Current Transfer Ratio (Note)	h _{FE}	I _C =10mA, V _{CE} =1V	100			
		I _C =2A, V _{CE} =1V	100		300	
		I _C =5A, V _{CE} =1V	55			
		I _C =10A, V _{CE} =1V	20			
Turn-ON Delay Time (Note 1)	t _{D(ON)}	I _C =1A, V _{CC} =10V, I _{B1} =I _{B2} =100mA		42		ns
Turn-OFF Delay Time	t _{D(OFF)}			760		ns
Transition Frequency (Note)	f _T	I _C =100mA, V _{CE} =10V, f=1MHz		130		MHz
Collector Capacitance	C _{OB}	V _{CB} =10V, f=1MHz		31		pF

Note : Measured under pulsed conditions. Pulse Test: Pulse width ≤ 300μs, Duty cycles ≤ 2%.

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