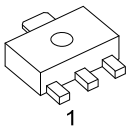
UTP2012Z

PNP EPITAXIAL SILICON TRANSISTOR

55V PNP LOW SATURATION MEDIUM POWER TRANSISTOR



SOT-89

■ DESCRIPTION

The **UTP2012Z** is an PNP low $V_{CE(SAT)}$ Breakthrough In Small Signal (BISS) transistor in a medium power.

NPN complement: UTN2010Z.

■ FEATURES

* Very low collector-emitter saturation voltage $V_{CE(SAT)}$
* High collector current capability IC and ICM
* High collector current gain (h_{FE}) at high IC
* High energy efficiency due to less heat generation
* Smaller required Printed-Circuit Board (PCB) area than for conventional transistors

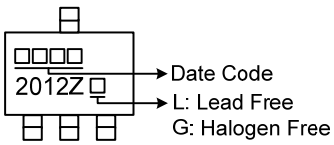
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTP2012ZL-AB3-R	UTP2012ZG-AB3-R	SOT-89	B	C	E	Tape Reel

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

UTP2012ZG-AB3-R (1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) AB3: SOT-89 (3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



■ ABSOLUATE MAXIUM RATINGS (T_A= 25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector to Base Voltage	V_{CBO}	-100	V
Collector to Emitter Voltage	V_{CEO}	-55	V
Emitter to Base Voltage	V_{EBO}	-7	V
Bese Current	I_B	-2	A
Collector Current	I_C	-4.3	A
Peak Collector Current (t_P≤1ms)	I_{CM}	-15	A
Collector Dissipation	P_C	1.5	W
Junction Temperature	T_J	-40 ~ +150	°C
Storage Temperature	T_{STG}	-65 ~ +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

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

■ 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	-100			V
Collector-Emitter Breakdown Voltage	BV_{CER}	I_C=-1μA, RB≤1kΩ	-100			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=-10mA	-55			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=-100μA	-7.0			V
Collector-Base Cut-off Current	I_{CBO}	V_{CB}=-80V, I_E=0A			-20	nA
		V_{CB}=-80V, I_E=0A, T_A=100°C			-500	nA
Collector-Emitter Cut-off Current	I_{CER}	V_{CE}=-80V, RB≤1kΩ			-20	nA
Emitter-Base Cut-off Current	I_{EBO}	V_{EB}=-6V, I_C=0A			-10	nA
Base-Emitter On Voltage (Note)	$V_{BE\ (ON)}$	V_{CE}=-1V, I_C=-5A			-950	mV
Base-Emitter Saturation Voltage (Note)	$V_{BE\ (SAT)}$	I_C=-5A, I_B=-500mA			-1050	mV
Collector-Emitter Saturation Voltage (Note)	$V_{CE(SAT)}$	I_C=-100mA, I_B=-10mA			-20	mV
		I_C=-1A, I_B=-100mA			-65	mV
		I_C=-2A, I_B=-200mA			-110	mV
		I_C=-5A, I_B=-500mA			-300	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	45			
		I_C=-10A, V_{CE}=-1V	10			
Transition Frequency (Note)	f_T	I_C=-100mA, V_{CE}=-10V, f=50MHz		120		MHz
Collector Capacitance	C_{OB}	V_{CB}=-10V, f=1MHz		90		pF
Turn-on Time	t_{ON}	I_C=-0.1A, V_{CC}=-1V, I_{B1}= I_{B2}=-10mA		280		ns
Turn-off Time	t_{OFF}			15		μs
Storage Time	t_s			14.9		μs
Fall Time	t_f			97		ns

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