



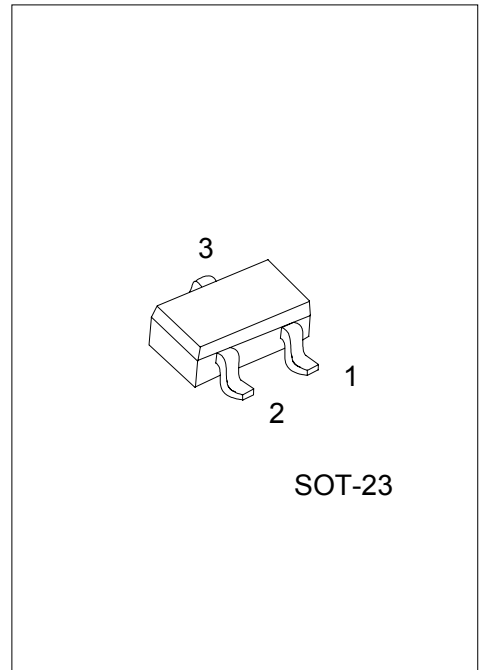
UP2518

PNP EPITAXIAL SILICON TRANSISTOR

LOW $V_{CE(SAT)}$ PNP SILICON POWER TRANSISTORS

■ FEATURES

- * Extremely low collector-emitter saturation voltage $V_{CE(SAT)}$ and corresponding extremely low equivalent on-resistance $R_{CE(SAT)}$ (97mΩ at 1.5A)
- * High collector current capability(1.5A)
- * High peak pulse current up to 6A
- * High collector current gain



*Pb-free plating product number: UP2518L

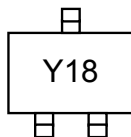
■ PIN CONFIGURATION

PIN NO.	PIN NAME
1	EMITTER
2	BASE
3	COLLECTOR

■ ORDERING INFORMATION

Order Number		Package	Packing
Normal	Lead Free Plating		
UP2518-AE3-6-R	UP2518L-AE3-6-R	SOT-23	Tape Reel

■ MARKING INFORMATION



■ ABSOLUTE MAXIMUM RATING ($T_a = 25$)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	-20	V
Collector-Emitter Voltage	V_{CEO}	-20	V
Emitter-Base Voltage	V_{EBO}	-5	V
Peak Pulse Current (Note 2)	I_{PEAK}	-6	A
Continuous Collector Current	I_C	-1.5	A
Base Current	I_B	-500	mA
Power Dissipation at $T_a = 25^\circ\text{C}$ (Note 3)	P_D	625	mW
Junction Temperature	T_J	+150	
Storage Temperature	T_{STG}	-40~+150	

Note 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. Pulse width=300ms. Duty cycle 2%

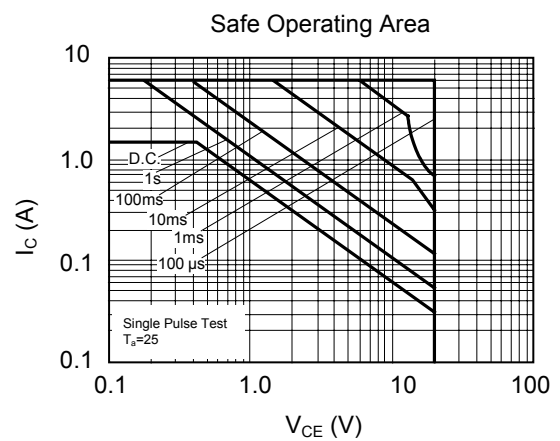
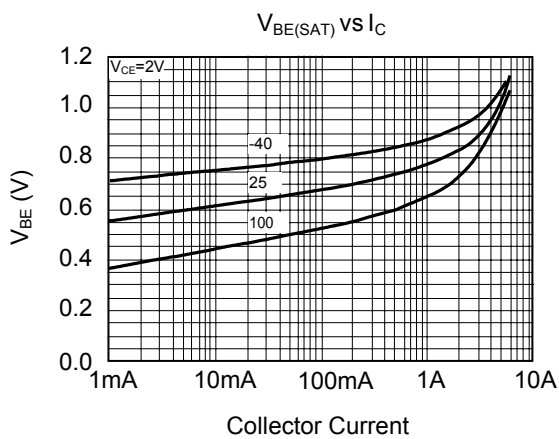
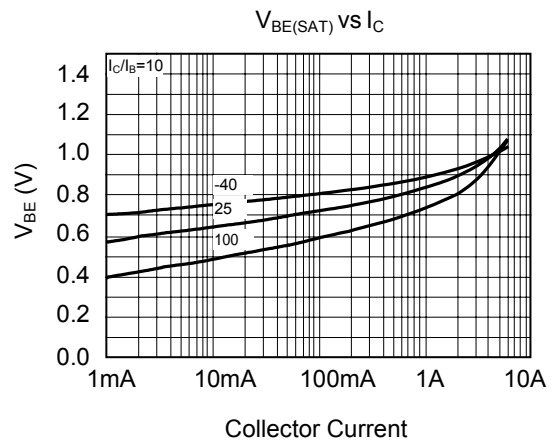
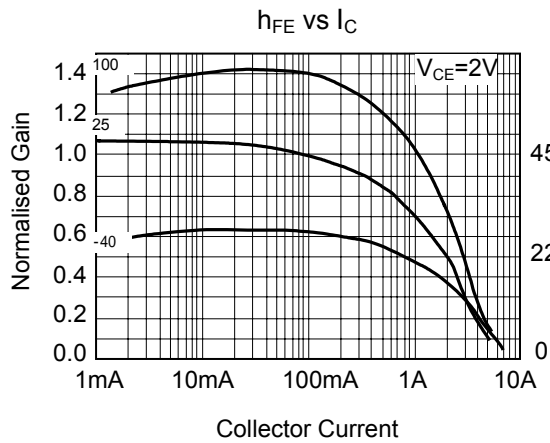
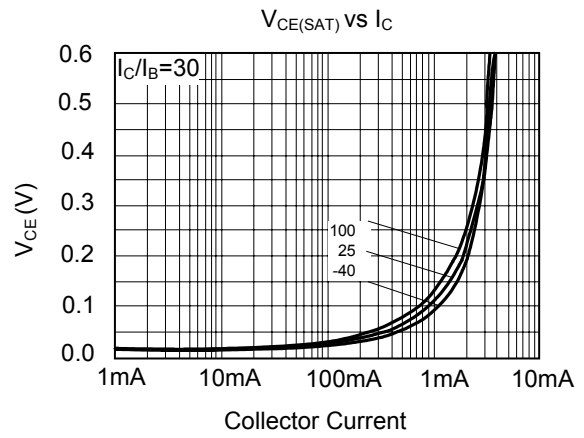
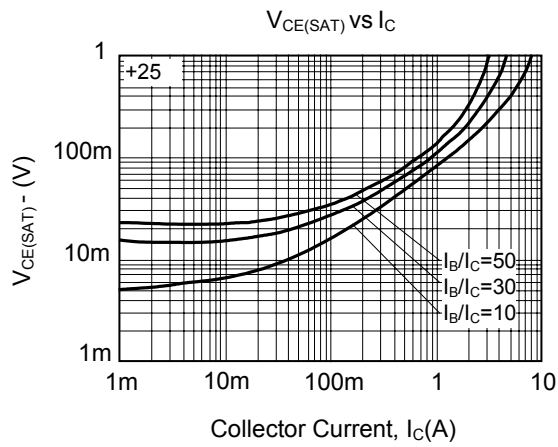
3. Assume the device is mounted and measured on a ceramic substrate 15x15x0.6mm

■ ELECTRICAL CHARACTERISTICS ($T_a = 25$, unless otherwise specified)

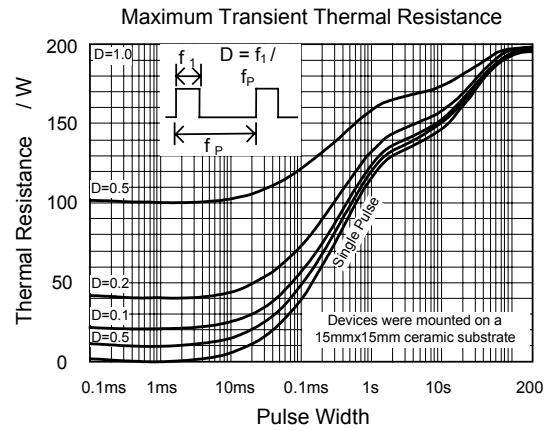
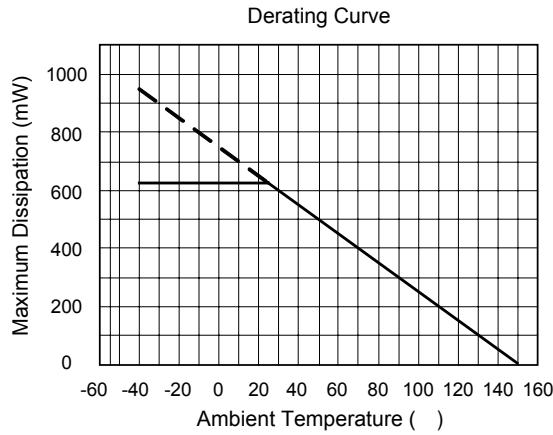
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C = -100\mu\text{A}$	-20	-65		V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = -10\text{mA}$	-20	-55		V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = -100\mu\text{A}$	-5	-8.8		V
Collector Cut-Off Current	I_{CBO}	$V_{CB} = -15\text{V}$			-100	nA
Emitter Cut-Off Current	I_{EBO}	$V_{EB} = -4\text{V}$			-100	nA
Collector Emitter Cut-Off Current	I_{CES}	$V_{CES} = -15\text{V}$			-100	nA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C = -100\text{mA}, I_B = -10\text{mA}$		-16	-40	mV
		$I_C = -1\text{A}, I_B = -20\text{mA}$		-130	-200	mV
		$I_C = -1.5\text{A}, I_B = -50\text{mA}$		-145	-220	mV
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C = -1.5\text{A}, I_B = -50\text{mA}$		-0.87	-1.0	V
Base-Emitter Turn-On Voltage	$V_{BE(ON)}$	$I_C = -2\text{A}, V_{CE} = -2\text{V}$		-0.81	-1.0	V
DC Current Gain	h_{FE}	$I_C = -10\text{mA}, V_{CE} = -2\text{V}$	300	475		
		$I_C = -100\text{mA}, V_{CE} = -2\text{V}$	300	450		
		$I_C = -2\text{A}, V_{CE} = -2\text{V}$	150	230		
		$I_C = -4\text{A}, V_{CE} = -2\text{V}$	35	70		
		$I_C = -6\text{A}, V_{CE} = -2\text{V}$	15	30		
Transition Frequency	f_T	$I_C = -50\text{mA}, V_{CE} = -10\text{V}, f = 100\text{MHz}$	150	180		MHZ
Output Capacitance	C_{OB}	$V_{CB} = -10\text{V}, f = 1\text{MHz}$		21	30	pF
Turn-On Time	$t_{(ON)}$	$V_{CC} = -10\text{V}, I_C = -1\text{A}$		40		ns
Turn-Off Time	$t_{(OFF)}$	$I_{B1} = I_{B2} = -20\text{mA}$		670		ns

*Measured under pulsed conditions. Pulse width=300ms. Duty cycle 2%

■ TYPICAL CHARACTERISTIC



■ THERMAL CHARACTERISTICS AND DERATING INFORMATION



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