



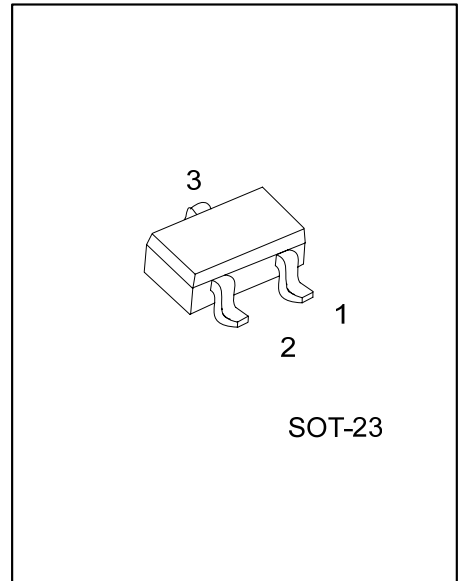
# UN1518

## NPN SILICON TRANSISTOR

### POWER (SWITCHING) TRANSISTOR

■ FEATURES

- \* Bipolar power transistor
- \* High current switching
- \* High  $h_{FE}$
- \* Low  $V_{CE(SAT)}$



\*Pb-free plating product number: UN1518L

■ ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
UN1518-AE3-R	UN1518L-AE3-R	SOT-23	E	B	C	Tape Reel

<p>UN1518L-AE3-R</p> <p>(1)Packing Type (2)Package Type (3)Lead Plating</p>	<p>(1) R: Tape Reel (2) AE3: SOT-23 (3) L: Lead Free Plating, Blank: Pb/Sn</p>
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■ ABSOLUTE MAXIMUM RATINGS (Tc = 25°C unless otherwise stated)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V <sub>CBO</sub>	20	V
Collector-Emitter Voltage	V <sub>CEO</sub>	20	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Collector Current (Pulse) Note 2	I <sub>CM</sub>	6	A
Collector Current (DC)	I <sub>C</sub>	2.5	A
Base Current	I <sub>B</sub>	500	mA
Total Device Dissipation	P <sub>D</sub>	625	mW
Storage Temperature	T <sub>STG</sub>	-50 ~ +150	°C

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.

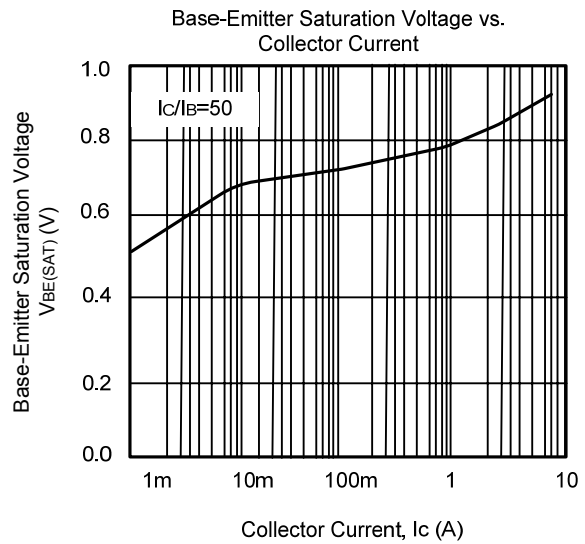
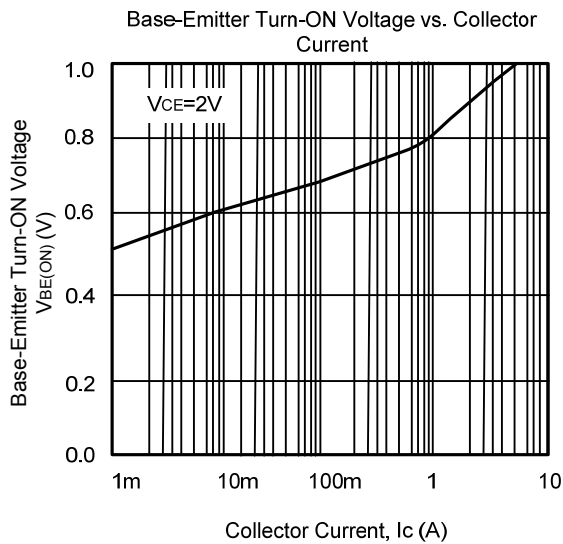
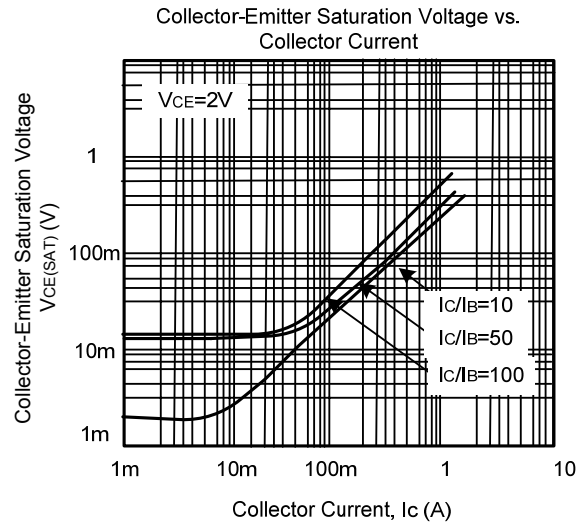
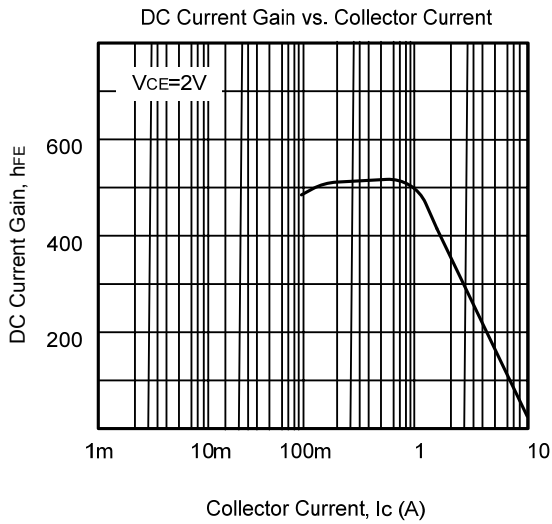
2. Pulse test t<sub>p</sub>=300μs. δ ≤ 2%

■ ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV <sub>CBO</sub>	I <sub>C</sub> =100μA	20	100		V
Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub> *	I <sub>C</sub> =10mA	20	27		V
Emitter-Base Breakdown Voltage	BV <sub>EBO</sub>	I <sub>E</sub> =100μA	5	8.3		V
Collector Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =16V			100	nA
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =4V			100	nA
Collector Emitter Cut-Off Current	I <sub>CES</sub>	V <sub>CES</sub> =16V			100	nA
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub> *	I <sub>C</sub> =0.1A, I <sub>B</sub> =10mA I <sub>C</sub> =1A, I <sub>B</sub> =10mA I <sub>C</sub> =2.5A, I <sub>B</sub> =50mA		10 70 130	15 150 200	mV
Base-Emitter Saturation Voltage	V <sub>BE(SAT)</sub> *	I <sub>C</sub> =2.5A, I <sub>B</sub> =50mA		0.89	1.0	V
Base-Emitter Turn-On Voltage	V <sub>BE(ON)</sub> *	I <sub>C</sub> =2.5A, V <sub>CE</sub> =2V		0.79	1.0	V
Static Forward Current Transfer Ratio	h <sub>FE</sub> *	I <sub>C</sub> =10mA, V <sub>CE</sub> =2V	200	400		
		I <sub>C</sub> =200mA, V <sub>CE</sub> =2V	300	450		
		I <sub>C</sub> =2A, V <sub>CE</sub> =2V	200	360		
		I <sub>C</sub> =6A, V <sub>CE</sub> =2V	100	180		
Transition Frequency	f <sub>T</sub>	I <sub>C</sub> =50mA, V <sub>CE</sub> =10V f=100MHz	100	140		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz		23	30	pF
Turn-On Time	t <sub>(ON)</sub>	V <sub>CC</sub> =10V, I <sub>C</sub> =1A I <sub>B1</sub> =-I <sub>B2</sub> =10mA		170		nS
Turn-Off Time	t <sub>(OFF)</sub>			400		nS

\* Pulse test conditions. t<sub>p</sub>=300μs. δ ≤ 2%

■ TYPICAL CHARACTERISTICS (Ta=25°C)



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