



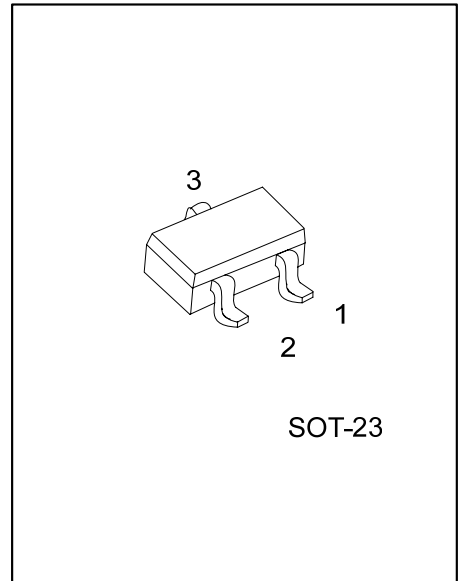
UN1518

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

UN1518L-AE3-R	(1)Packing Type (2)Package Type (3)Lead Plating	(1) R: Tape Reel (2) AE3: SOT-23 (3) L: Lead Free Plating, Blank: Pb/Sn
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■ **ABSOLUTE MAXIMUM RATINGS** ($T_c = 25^\circ\text{C}$ unless otherwise stated)

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
Collector Current (Pulse) Note 2	I_{CM}	6	A
Collector Current (DC)	I_C	2.5	A
Base Current	I_B	500	mA
Total Device Dissipation	P_D	625	mW
Storage Temperature	T_{STG}	-50 ~ +150	$^\circ\text{C}$

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.

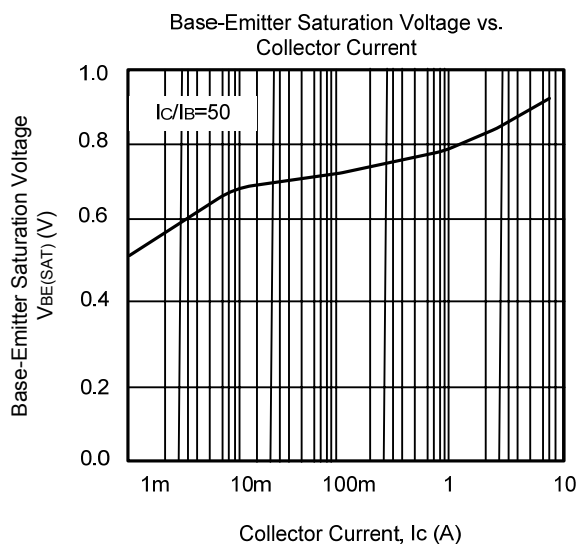
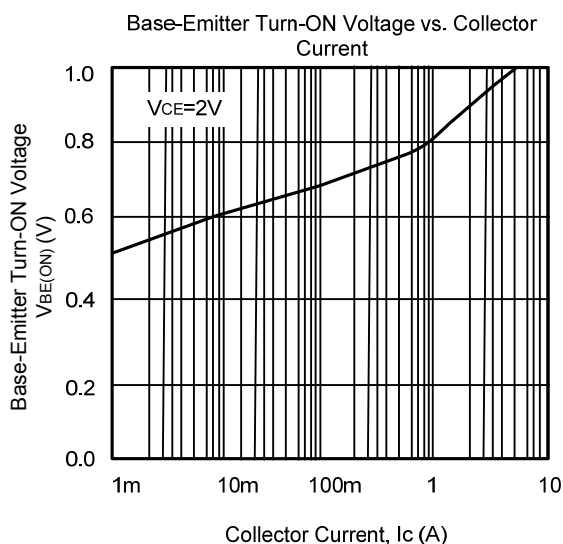
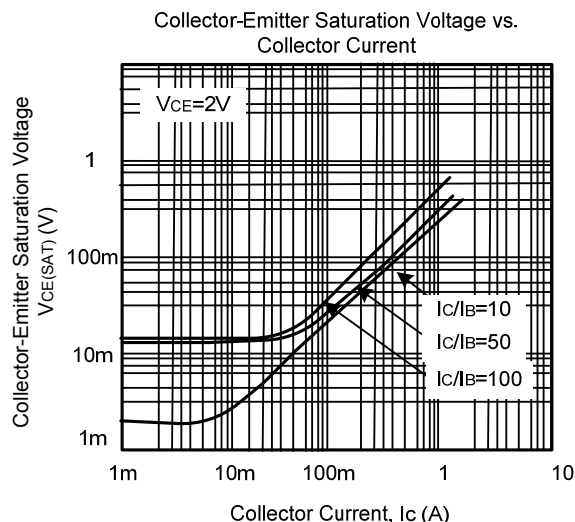
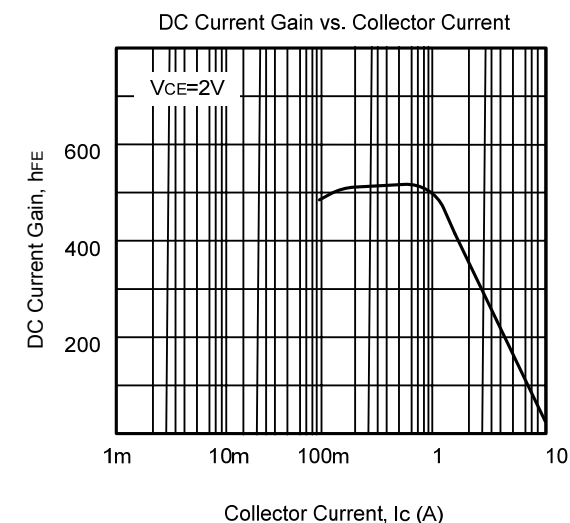
2. Pulse test $t_p=300\mu\text{s}$. $\delta \leq 2\%$

■ **ELECTRICAL CHARACTERISTICS**

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=100\mu\text{A}$	20	100		V
Collector-Emitter Breakdown Voltage	BV_{CEO}^*	$I_C=10\text{mA}$	20	27		V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=100\mu\text{A}$	5	8.3		V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=16\text{V}$			100	nA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=4\text{V}$			100	nA
Collector Emitter Cut-Off Current	I_{CES}	$V_{CES}=16\text{V}$			100	nA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}^*$	$I_C=0.1\text{A}, I_B=10\text{mA}$		10	15	mV
		$I_C=1\text{A}, I_B=10\text{mA}$		70	150	
		$I_C=2.5\text{A}, I_B=50\text{mA}$		130	200	
Base-Emitter Saturation Voltage	$V_{BE(SAT)}^*$	$I_C=2.5\text{A}, I_B=50\text{mA}$		0.89	1.0	V
Base-Emitter Turn-On Voltage	$V_{BE(ON)}^*$	$I_C=2.5\text{A}, V_{CE}=2\text{V}$		0.79	1.0	V
Static Forward Current Transfer Ratio	h_{FE}^*	$I_C=10\text{mA}, V_{CE}=2\text{V}$	200	400		
		$I_C=200\text{mA}, V_{CE}=2\text{V}$	300	450		
		$I_C=2\text{A}, V_{CE}=2\text{V}$	200	360		
		$I_C=6\text{A}, V_{CE}=2\text{V}$	100	180		
Transition Frequency	f_T	$I_C=50\text{mA}, V_{CE}=10\text{V}, f=100\text{MHz}$	100	140		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		23	30	pF
Turn-On Time	$t_{(ON)}$	$V_{CC}=10\text{V}, I_C=1\text{A}, I_{B1}=-I_{B2}=10\text{mA}$		170		nS
Turn-Off Time	$t_{(OFF)}$			400		nS

* Pulse test conditions. $t_p=300\mu\text{s}$. $\delta \leq 2\%$

■ TYPICAL CHARACTERISTICS (Ta=25°C)



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