



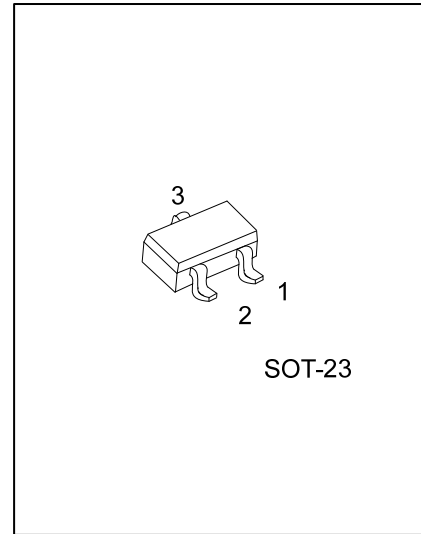
UN1518

NPN SILICON TRANSISTOR

POWER (SWITCHING) TRANSISTOR

■ FEATURES

- * Bipolar Power Transistor
- * High Current Switching
- * High h_{FE}
- * Low $V_{CE(SAT)}$

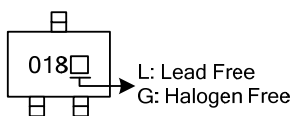


■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free Plating	Halogen Free		1	2	3	
UN1518L-AE3-R	UN1518G-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, G: Halogen Free</p>
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■ MARKING



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
	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	$^\circ\text{C}$

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.

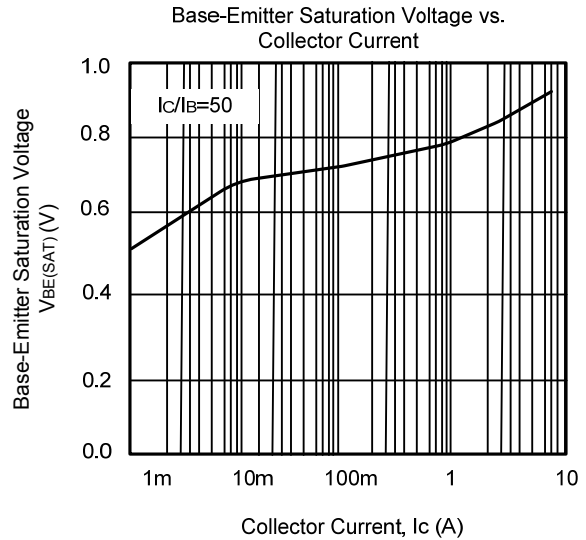
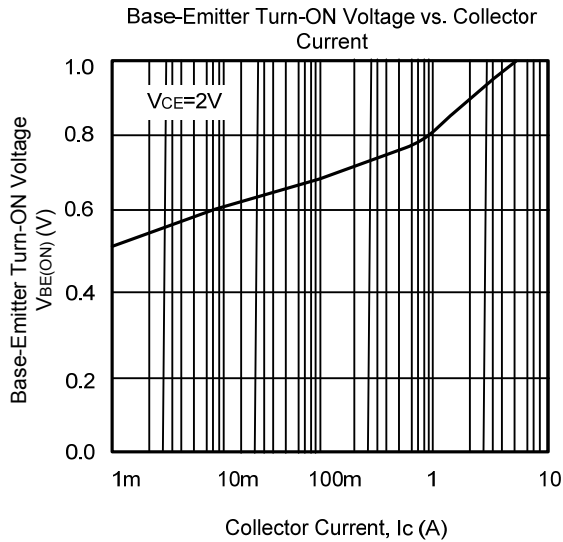
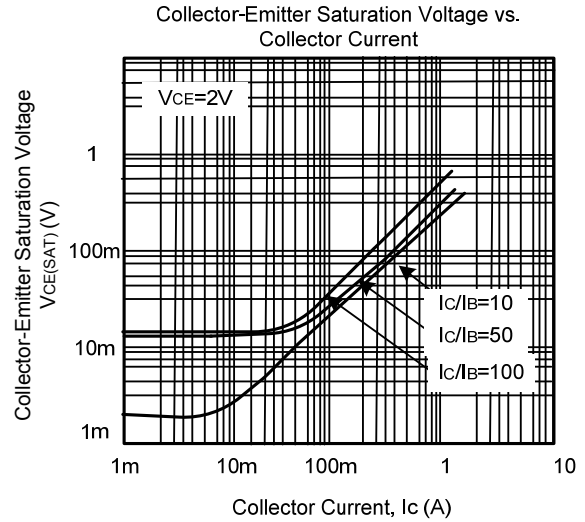
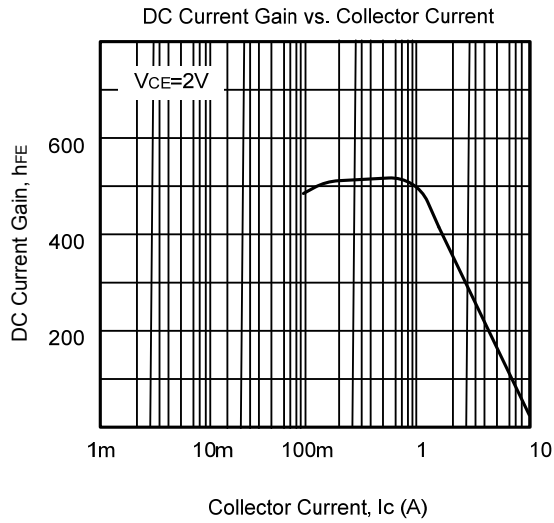
2. Pulse width=300ms. Duty cycle $\leq 2\%$

■ 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}	$I_C=10\text{mA}$ (Note)	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 (Note)	$V_{CE(SAT)}$	$I_C=0.1\text{A}, I_B=10\text{mA}$		10	15	mV
		$I_C=1\text{A}, I_B=10\text{mA}$		70	150	mV
		$I_C=2.5\text{A}, I_B=50\text{mA}$		200	250	mV
Base-Emitter Saturation Voltage (Note)	$V_{BE(SAT)}$	$I_C=2.5\text{A}, I_B=50\text{mA}$		0.89	1.0	V
Base-Emitter Turn-On Voltage (Note)	$V_{BE(ON)}$	$V_{CE}=2\text{V}, I_C=2.5\text{A}$		0.79	1.0	V
DC Current Gain (Note)	h_{FE}	$V_{CE}=2\text{V}, I_C=10\text{mA}$	200	400		
		$V_{CE}=2\text{V}, I_C=200\text{mA}$	300	450		
		$V_{CE}=2\text{V}, I_C=2\text{A}$	200	360		
		$V_{CE}=2\text{V}, I_C=6\text{A}$	100	180		
Transition Frequency	f_T	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=100\text{MHz}$	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

Note: Pulse width=300ms. Duty cycle $\leq 2\%$

■ TYPICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$)



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