



BSS123

Power MOSFET

170mA, 100V N-CHANNEL POWER MOSFET

DESCRIPTION

The UTC **BSS123** is an N-channel mode Power MOSFET, it uses UTC's advanced technology to provide the customers with low C_{RSS} .

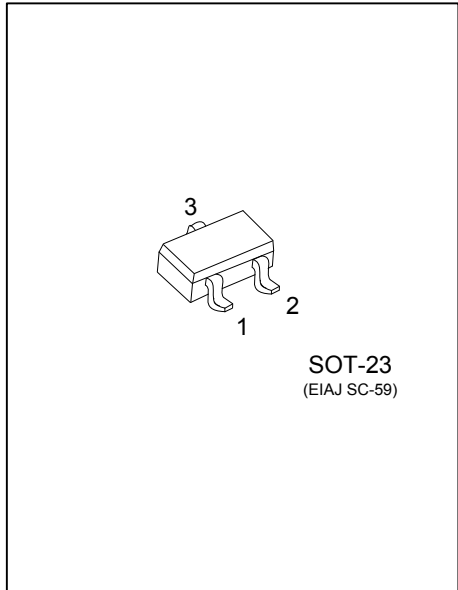
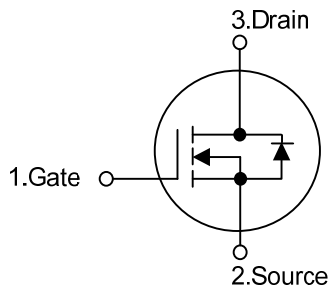
The UTC **BSS123** is suitable for Automotive and Other Applications Requiring.

FEATURES

* $R_{DS(on)} \leq 6.0\Omega$ @ $V_{GS}=10V, I_D=100mA$

* Low C_{RSS}

SYMBOL



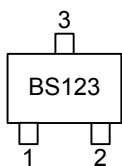
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BSS123L-AE3-R	BSS123G-AE3-R	SOT-23	G	S	D	Tape Reel

Note: Pin Assignment: G: Gate S: Source D: Drain

<p>BSS123G-AE3-R</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Green Package</p>	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	100	V
Gate-Source Voltage	Continuous	V_{GSS}	± 20	V
	Non-Repetitive	V_{GSM}	± 40	Vpk
Drain Current	Continuous (Note 1)	I_D	0.17	A
	Pulsed (Note 2)	I_{DM}	0.68	A
Power Dissipation	$T_A=25^\circ\text{C}$ (Note 3)	P_D	225	mW
	Derate above 25°C		1.8	mW/ $^\circ\text{C}$
Junction Temperature		T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature Range		T_{STG}	-55~ +150	$^\circ\text{C}$

Note: 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.

■ THERMAL CHARACTERISTICS

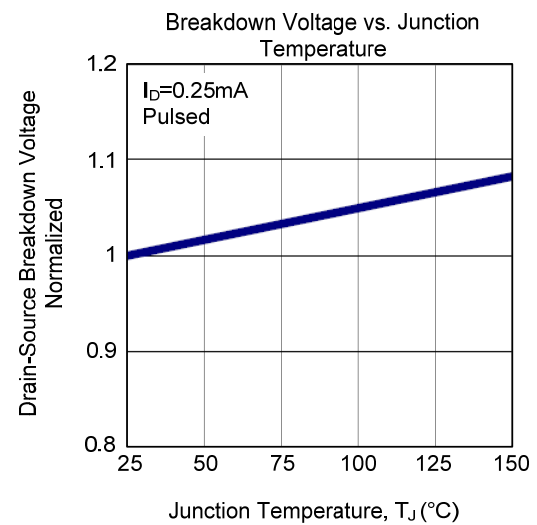
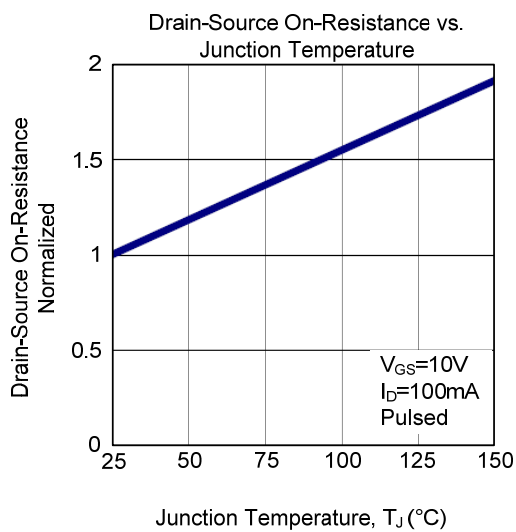
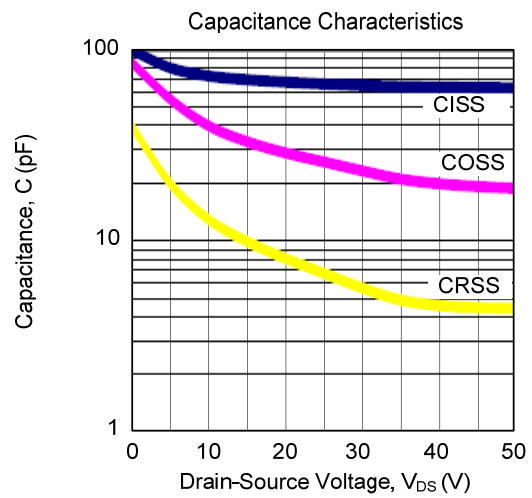
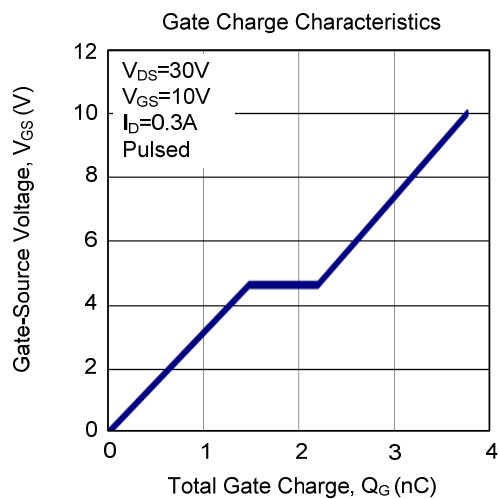
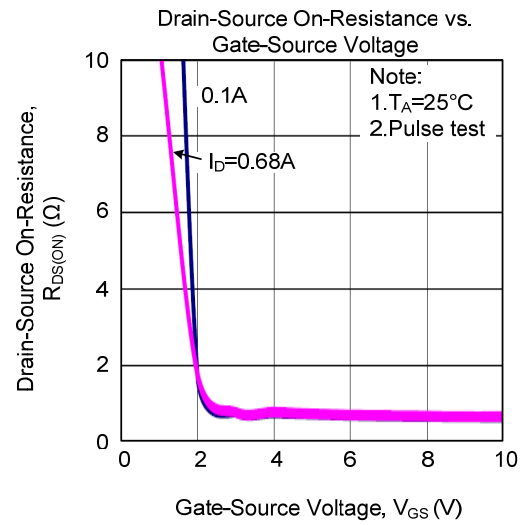
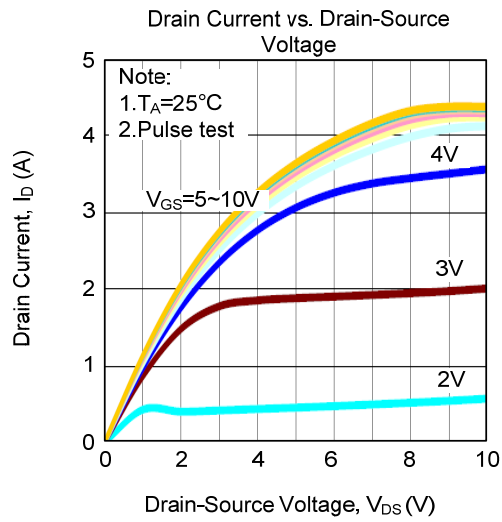
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	556	$^\circ\text{C}/\text{W}$

■ ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$, unless otherwise noted)

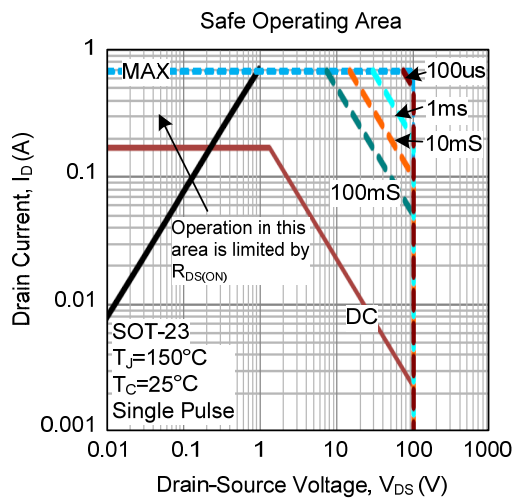
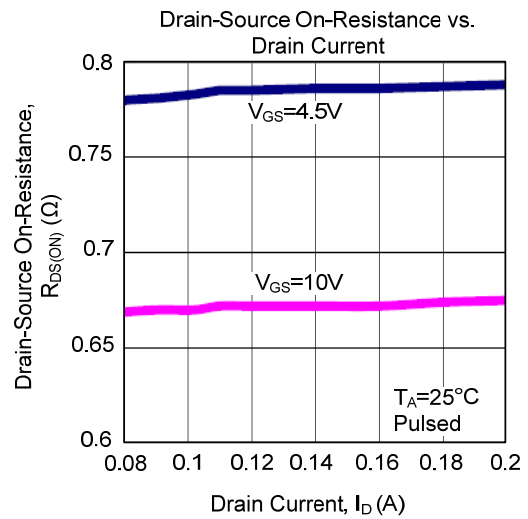
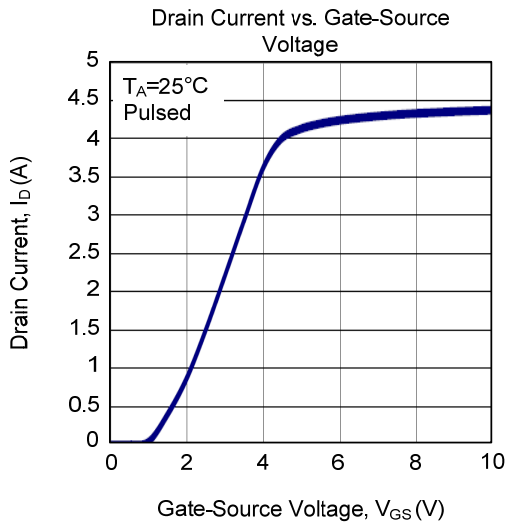
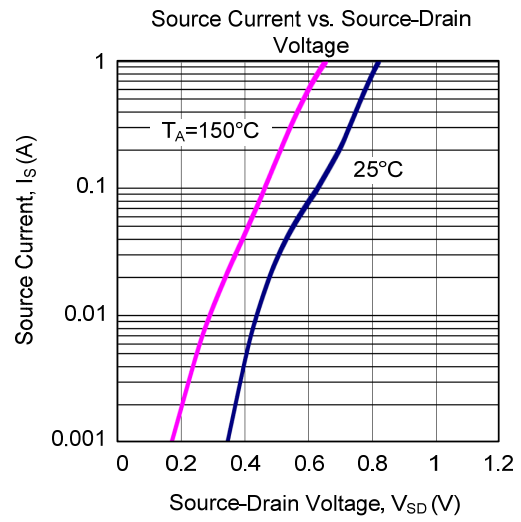
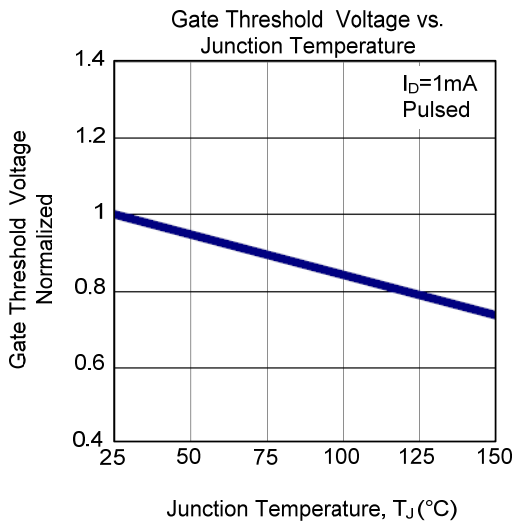
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu\text{A}, V_{GS}=0\text{V}$	100			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=100\text{V}, V_{GS}=0\text{V}, T_J=25^\circ\text{C}$			15	μA
		$V_{DS}=100\text{V}, V_{GS}=0\text{V}, T_J=125^\circ\text{C}$			60	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=+20\text{V}, V_{DS}=0\text{V}$			± 100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=1\text{mA}$	0.6		2.0	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=100\text{mA}$			6.0	Ω
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS}=0\text{V}, V_{DS}=25\text{V}, f=1.0\text{MHz}$		65		pF
Output Capacitance	C_{OSS}			25		pF
Reverse Transfer Capacitance	C_{RSS}			6.7		pF
SWITCHING CHARACTERISTICS						
Total Gate Charge (Note 1)	Q_G	$V_{DS}=30\text{V}, V_{GS}=10\text{V}, I_D=0.3\text{A}, I_G=1\text{mA}$ (Note 1, 2)		3.8		nC
Gate to Source Charge	Q_{GS}			1.5		nC
Gate to Drain Charge	Q_{GD}			0.7		nC
SWITCHING PARAMETERS						
Turn-ON Delay Time	$t_{D(ON)}$	$V_{CC}=30\text{V}, I_C=0.28\text{A}, V_{GS}=10\text{V}, R_{GS}=50\Omega$		20		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			40		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V_{SD}	$I_D=0.34\text{A}, V_{GS}=0\text{V}$			1.3	V

Notes: 1. The Power Dissipation of the package may result in a lower continuous drain current.
 2. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$.
 3. FR-5=1.0×0.75×0.062 in.

TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS (Cont.)



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