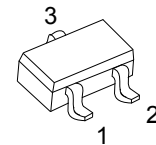
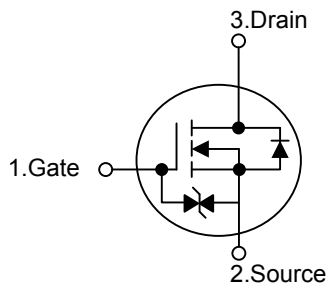


**BSS123Z***Power MOSFET***170mA, 100V N-CHANNEL
ENHANCEMENT MODE POWER
MOSFET****DESCRIPTION**

The UTC **BSS123Z** uses advanced technology to provide excellent $R_{DS(on)}$, low gate charge and operation with low gate voltages. This device is suitable for use as a load switch or in PWM applications.

FEATURES

- * $R_{DS(on)} \leq 6.0\Omega$ @ $V_{GS}=10V$, $I_D=100mA$
- * ESD Protected
- * Fast Switching Capability
- * Avalanche Energy Specified
- * Improved dv/dt Capability, High Ruggedness

SYMBOL

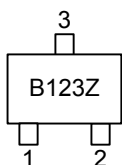
SOT-23
(EIAJ SC-59)

ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BSS123ZL-AE3-R	BSS123ZG-AE3-R	SOT-23	G	S	D	Tape Reel

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

BSS123ZG-AE3-R	(1)Packing Type	(1) R: Tape Reel
	(2)Package Type	(2) AE3: SOT-23
	(3)Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

MARKING

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage	Continuous	V_{GS}	± 20	V
	Non-Repetitive	V_{GSM}	± 40	V _{pk}
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	$-55 \sim +150$	$^\circ\text{C}$
Storage Temperature Range		T_{STG}	$-55 \sim +150$	$^\circ\text{C}$

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	$^\circ\text{C/W}$

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

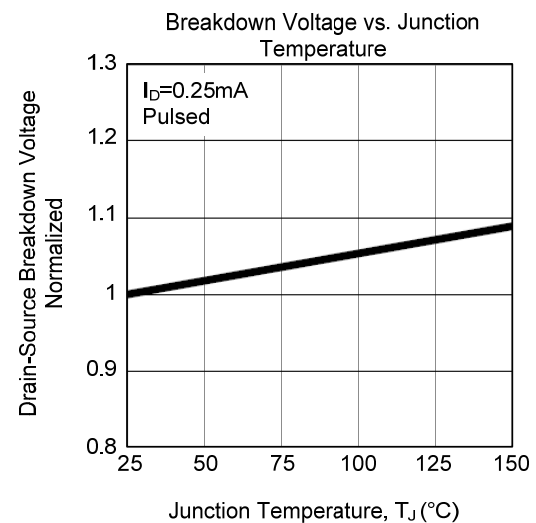
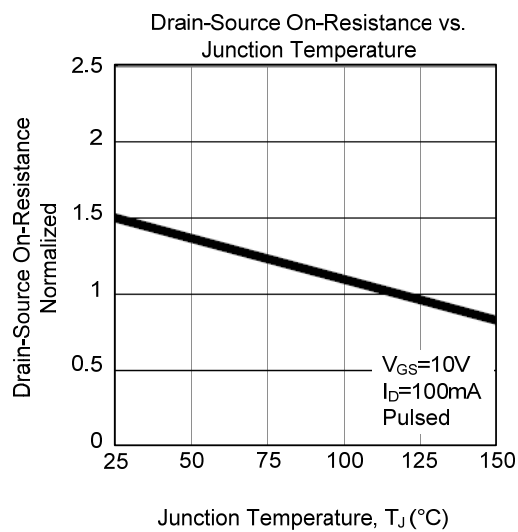
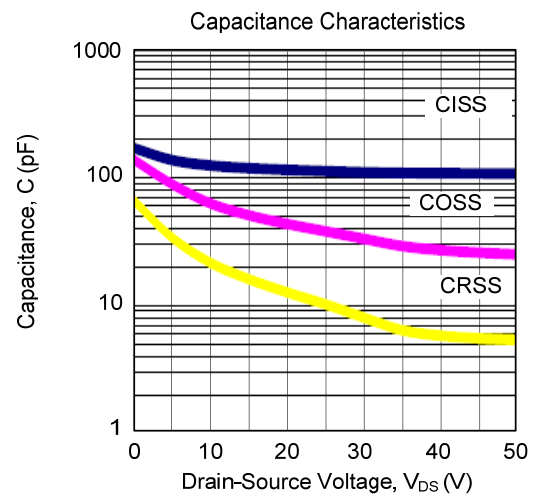
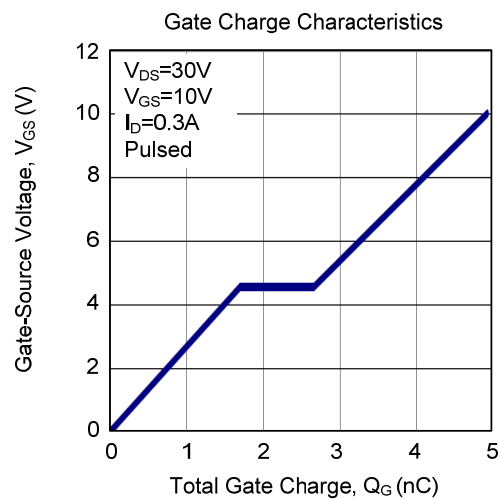
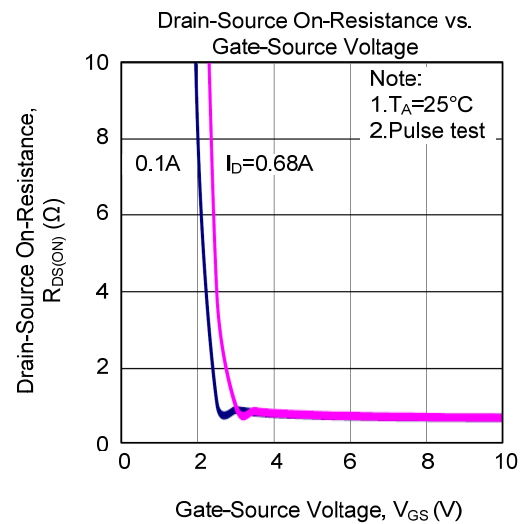
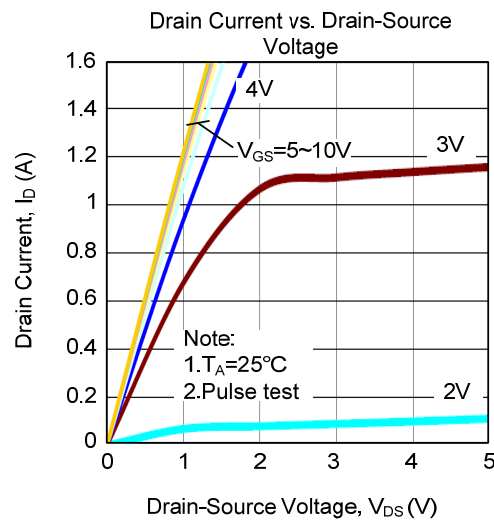
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =250μA, V _{GS} =0V	100			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V, T _J =25°C			15	μA
		V _{DS} =100V, V _{GS} =0V, T _J =125°C			60	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V			±10	μA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =1mA	0.6		2.0	V
Static Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =100mA			6.0	Ω
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =25V, f=1.0MHz		110		pF
Output Capacitance	C _{OSS}			38		pF
Reverse Transfer Capacitance	C _{RSS}			10		pF
SWITCHING CHARACTERISTICS						
Total Gate Charge (Note 1)	Q _G	V _{DS} =30V, V _{GS} =10V, I _D =0.3A , I _G =1mA (Note 1, 2)		5		nC
Gate to Source Charge	Q _{GS}			1.7		nC
Gate to Drain Charge	Q _{GD}			1		nC
Turn-ON Delay Time	t _{D(ON)}	V _{CC} =30V, V _{GS} =10V, I _C =0.3A, R _{GS} =50Ω		5		ns
Turn-On Rise Time	t _R			10		ns
Turn-OFF Delay Time	t _{D(OFF)}			45		ns
Turn-Off Fall Time	t _F			20		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Continuous Drain-Source Diode Forward Current	I _S				0.17	A
Maximum Pulsed Drain-Source Diode Forward Current	I _{SM}				0.68	A
Drain-Source Diode Forward Voltage	V _{SD}	I _D =0.34A, V _{GS} =0V			1.3	V

Notes: 1. The Power Dissipation of the package may result in a lower continuous drain current.

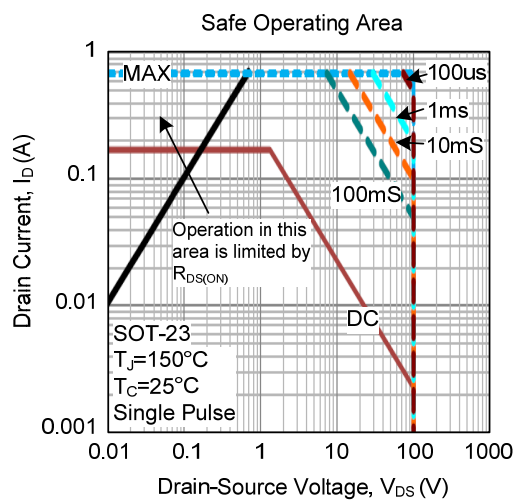
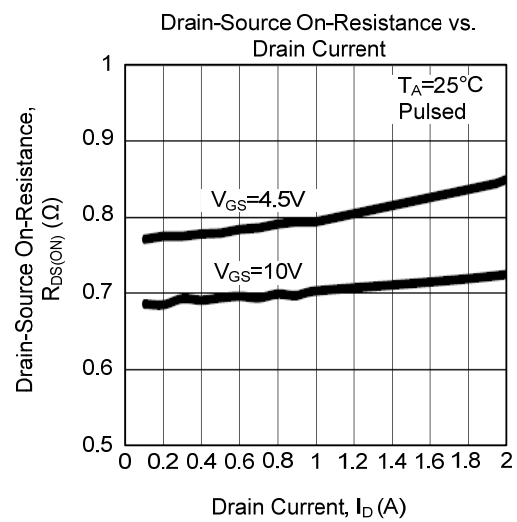
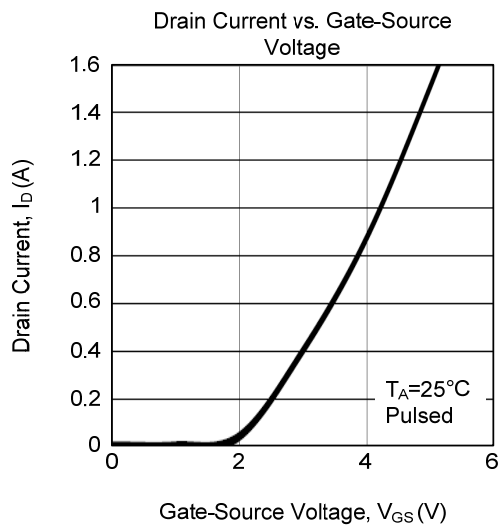
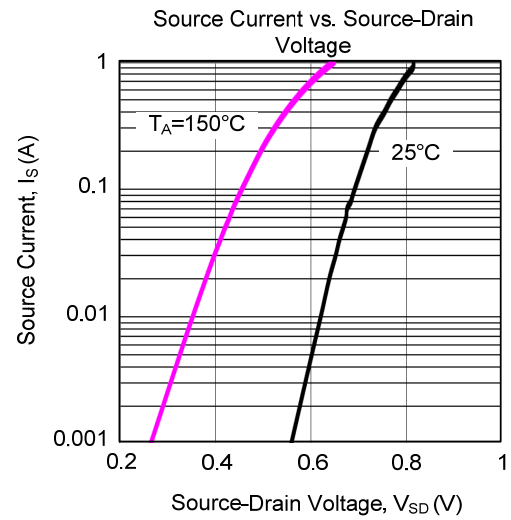
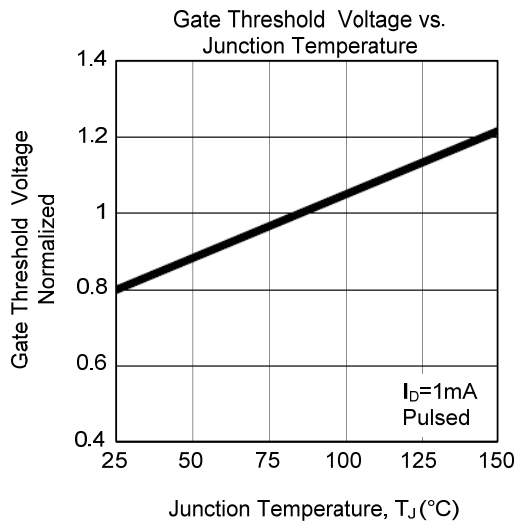
2. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$.

3. FR-5=1.0×0.75×0.062 in.

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



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