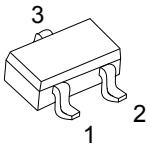
BSS123

Power MOSFET

170mA, 100V N-CHANNEL POWER MOSFET



SOT-23
(EIAJ SC-59)

■ DESCRIPTION

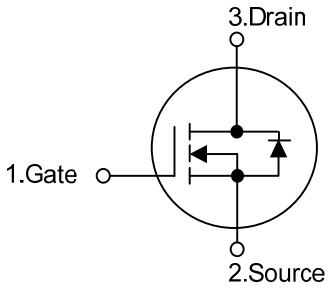
The UTC **BSS123** is an N-channel mode Power MOSFET, it uses UTC's advanced technology to provide the customers with low C_{RSS}.

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

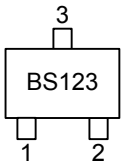
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BSS123L-AE3-R	BSS123G-AE3-R	SOT-23	G	S	D	Tape Reel

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

BSS123G-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_{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°C (Note 3)	P_D	225	mW
	Derate above 25°C		1.8	mW/°C
Junction Temperature		T_J	-55 ~ +150	°C
Storage Temperature Range		T_{STG}	-55~ +150	°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

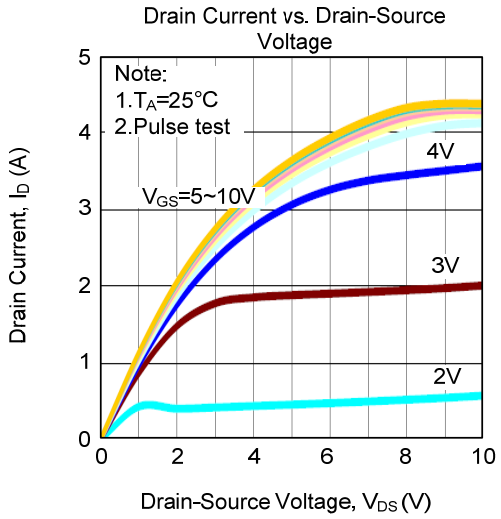
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	556	°C/W

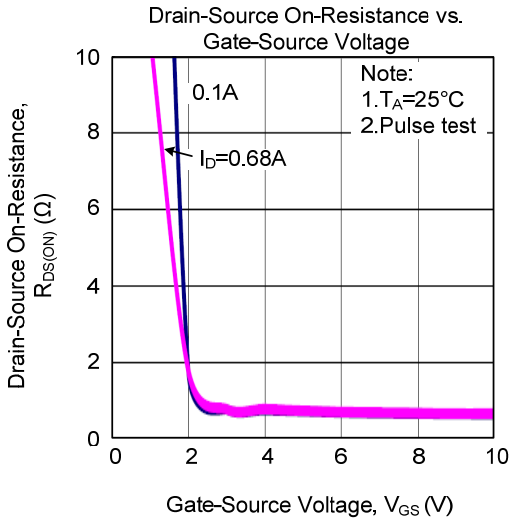
■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise noted)

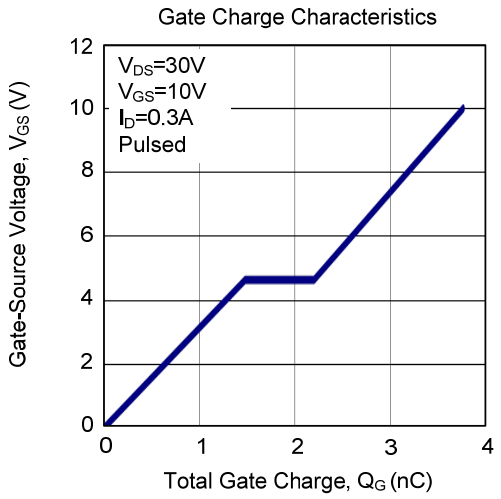
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=250μA, V_{GS}=0V	100			V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=100V, V_{GS}=0V, T_J=25°C			15	μA
		V_{DS}=100V, V_{GS}=0V, T_J=125°C			60	μA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=+20V, V_{DS}=0V			±100	nA
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		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}=30V, V_{GS}=10V, I_D=0.3A , I_G=1mA (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}=30V, I_C=0.28A, V_{GS}=10V, R_{GS}=50Ω		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=0.34A, V_{GS}=0V			1.3	V

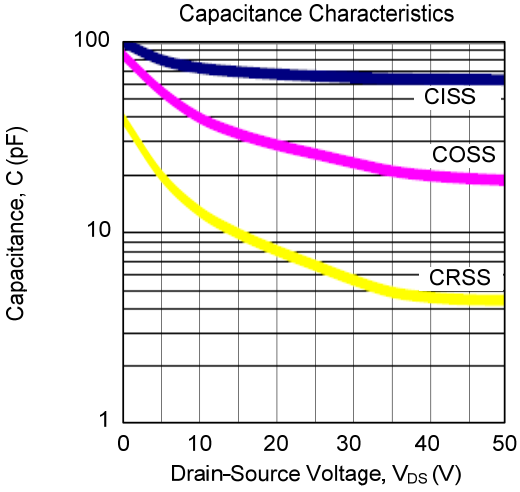
Notes: 1. The Power Dissipation of the package may result in a lower continuous drain current.
2. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2.0%.
3. FR−5=1.0×0.75×0.062 in.

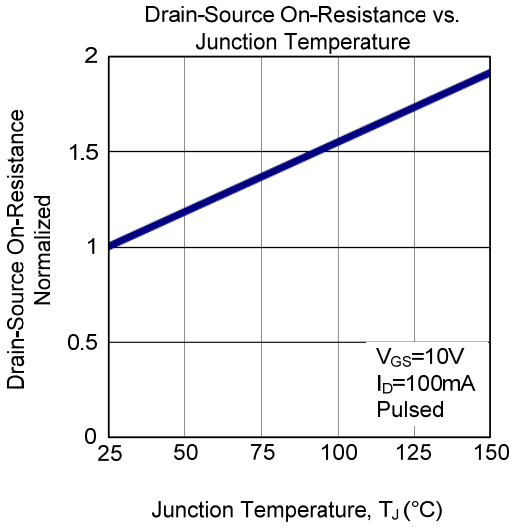
■ TYPICAL CHARACTERISTICS

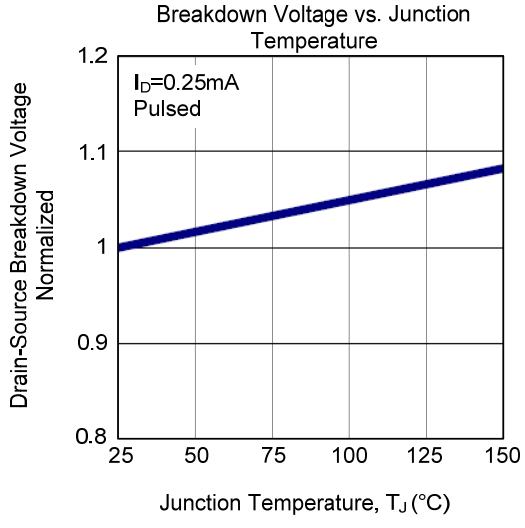












■ TYPICAL CHARACTERISTICS (Cont.)