BSS126

600V N-Channel Depletion-Mode MOSFET

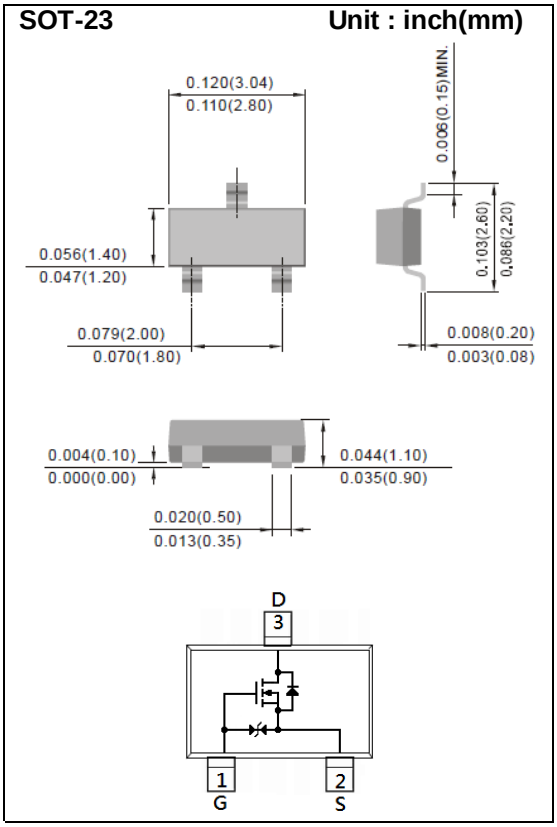
Voltage	600 V	Current	30mA

Features

- $R_{DS(ON)}$, V_{GS}@10V,I_D@16mA<700Ω
- $R_{DS(ON)}$, V_{GS}@0V,I_D@3mA<700Ω
- Fast switching.
- Improved dv/dt capability
- Improved ESD ability
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. (Halogen Free)

Mechanical Data

- Case: SOT-23 Package
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0003 ounces, 0.0084 grams
- Marking: 126



Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

PARAMETER		SYMBOL	LIMIT	UNITS
Drain-Source Voltage		V_{DS}	600	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current		I_D	30	mA
Pulsed Drain Current		I_{DM}	120	mA
Power Dissipation	T_C=25°C	P_D	500	mW
	Derate above 25°C		0.004	W/°C
Operating Junction and Storage Temperature Range		T_J,T_{STG}	-55~150	°C
Thermal resistance - Junction to Ambient		$R_{\theta JA}$	250	°C/W

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Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=-5V,I_D=250uA	600	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=3V,I_D=8uA	-2.7	-1.9	-1	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS}=0V,I_D=3mA	-	350	700	Ω
		V_{GS}=10V,I_D=16mA	-	420	700	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=25V,V_{GS}=0V	12	23	40	mA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	-	±0.1	±10	uA
Diode Forward Voltage	V_{SD}	I_S=16mA,V_{GS}=-5V	-	0.83	1.2	V
Dynamic(Note 3)						
Total Gate Charge	Q_g	V_{DS}=400V, I_D=0.01A, V_{GS}=-5V to 5V (Note 1,2)	-	1.9	-	nC
Gate-Source Charge	Q_{gs}		-	0.9	-	
Gate-Drain Charge	Q_{gd}		-	0.7	-	
Input Capacitance	Ciss	V_{DS}=25V, V_{GS}=-5V, f=1.0MHZ	-	101	-	pF
Output Capacitance	Coss		-	9.5	-	
Reverse Transfer Capacitance	Crss		-	6	-	
Turn-On Delay Time	$td_{(on)}$	V_{DD}=300V, I_D=0.01A, V_{GS}=-5~7V, R_G=6Ω (Note 1,2)	-	20	-	ns
Turn-On Rise Time	t_r		-	92	-	
Turn-Off Delay Time	$td_{(off)}$		-	95	-	
Turn-Off Fall Time	t_f		-	210	-	
Drain-Source Diode						
Maximum Continuous Drain-Source Diode Forward Current	I_S	---	-	-	0.03	A
Maximum Pulsed Drain-Source Diode Forward Current	I_{SM}	---	-	-	0.12	A
Reverse Recovery Time	trr	V_{GS}=300V, I_S=0.01A dI_F/ dt=100A/us (Note 2)	-	370	-	ns
Reverse Recovery Charge	Qrr		-	960	-	uC

NOTES :

1. Pulse width≤300us, Duty cycle≤2%
2. Essentially independent of operating temperature typical characteristics.
3. Guaranteed by design, not subject to production testing.

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TYPICAL CHARACTERISTIC CURVES

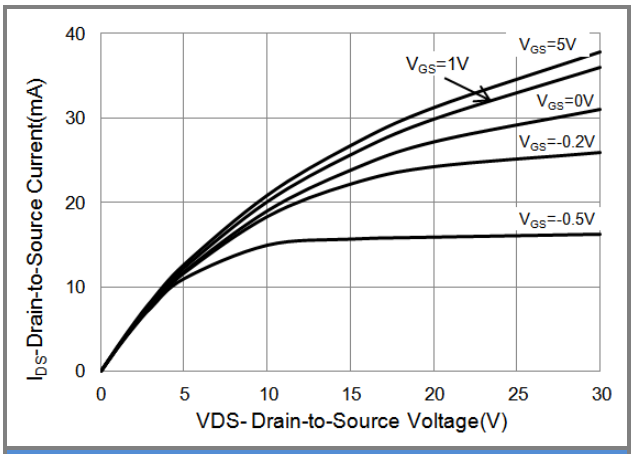

Fig.1 Output Characteristics

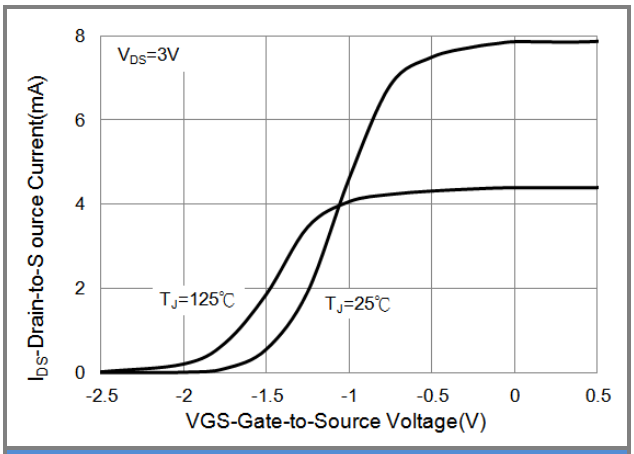

Fig.2 Transfer Characteristics

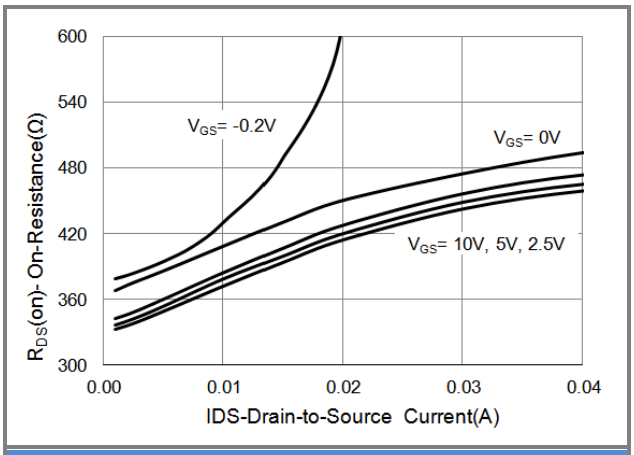

Fig.3 On-Resistance vs. Drain Current

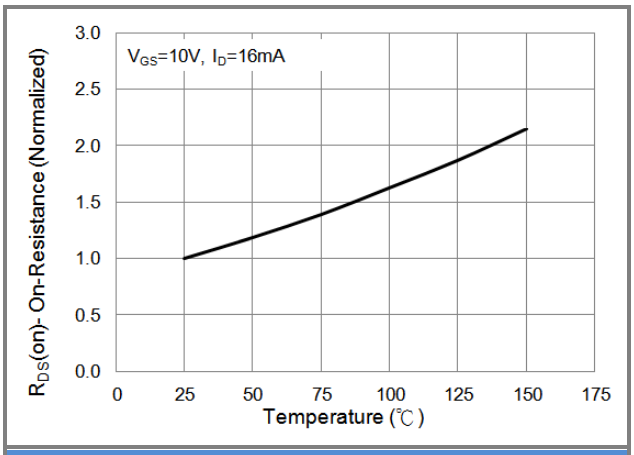

Fig.4 On-Resistance vs. Junction Temperature

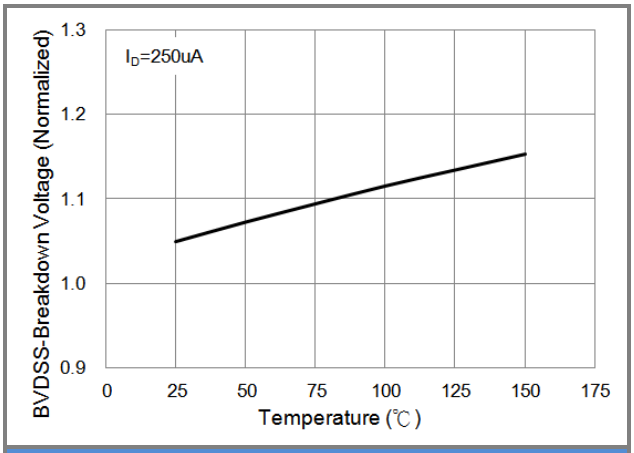

Fig.5 BV_{DSS} vs. Junction Temperature

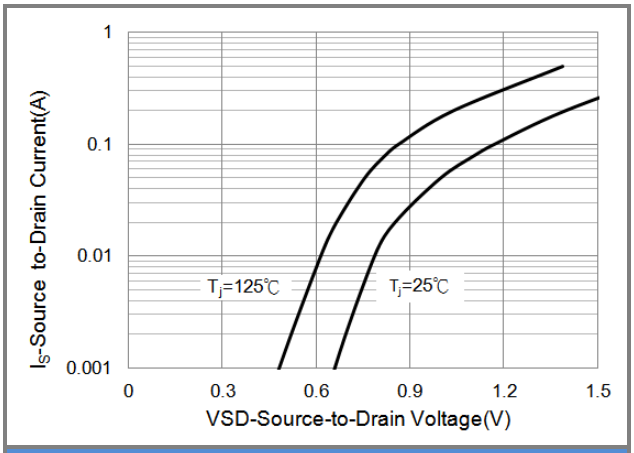

Fig.6 Source-Drain Diode Forward Voltage

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TYPICAL CHARACTERISTIC CURVES

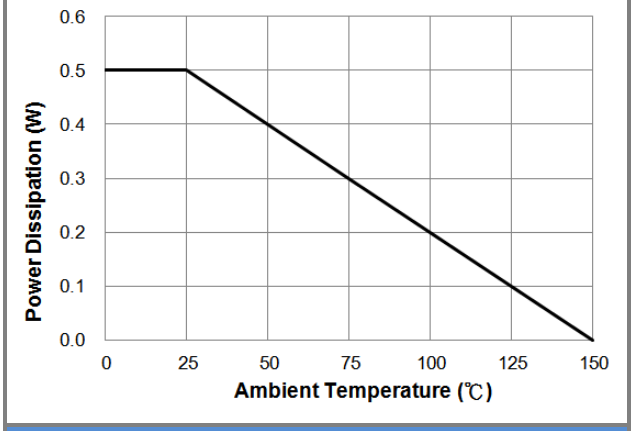

Fig.7 Power Dissipation vs. Case Temperature

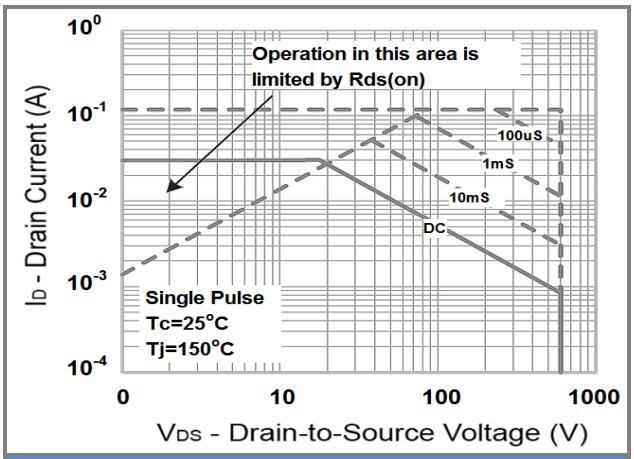

Fig.8 Maximum Safe Operating Area

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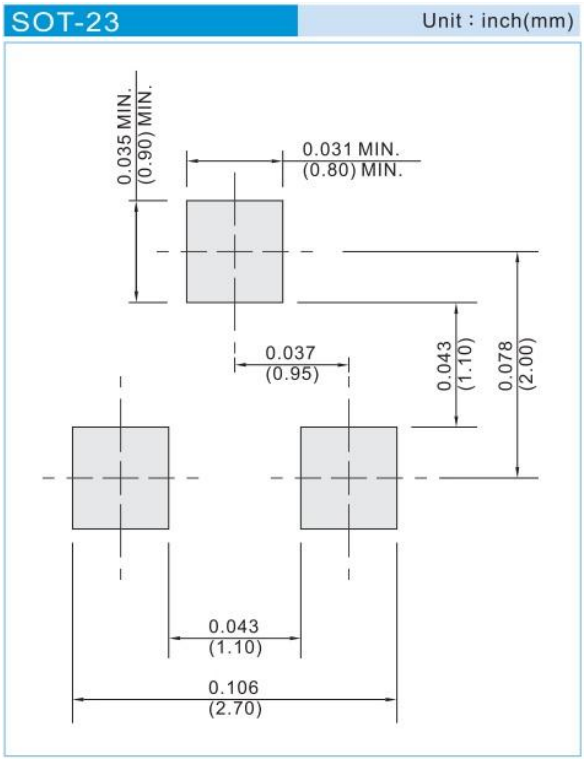
PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
BSS126_R1_00001	SOT-23	3K pcs / 7” reel	126	Halogen free
BSS126_R2_00001	SOT-23	12K pcs / 13” reel	126	Halogen free

MOUNTING PAD LAYOUT



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