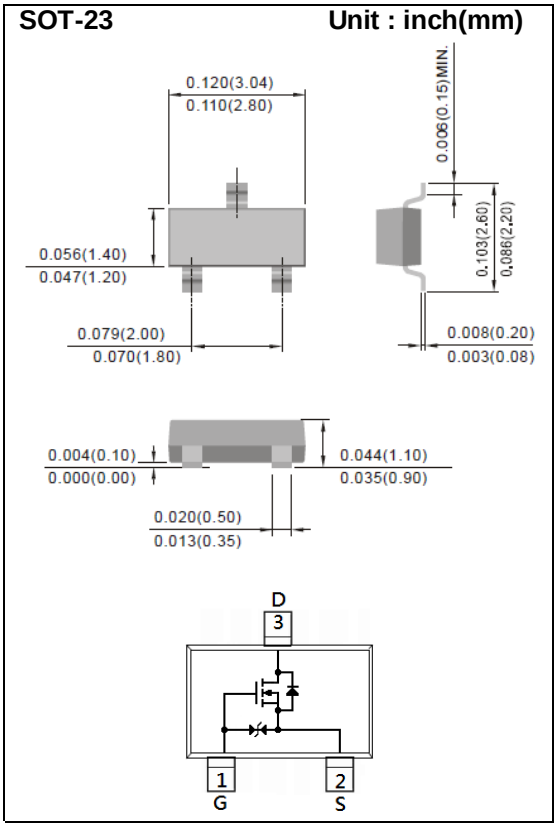
BSS126

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

BSS126

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.

BSS126

TYPICAL CHARACTERISTIC CURVES

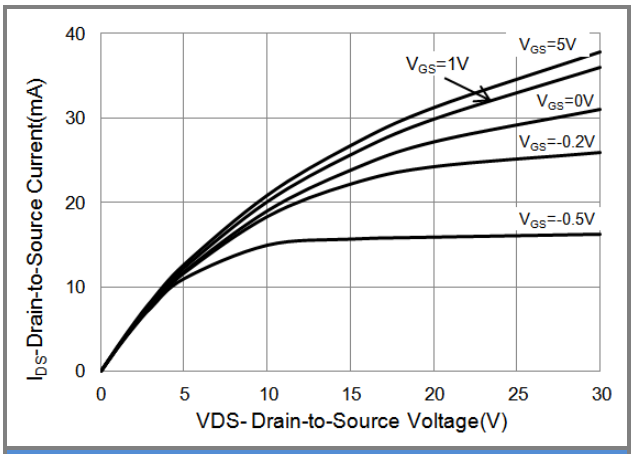


Fig.1 Output Characteristics

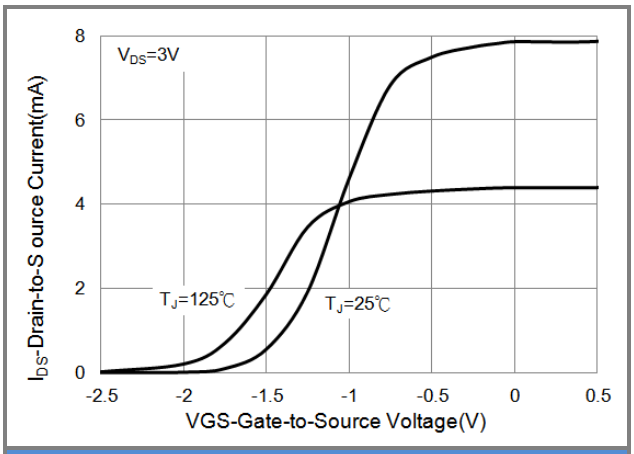


Fig.2 Transfer Characteristics

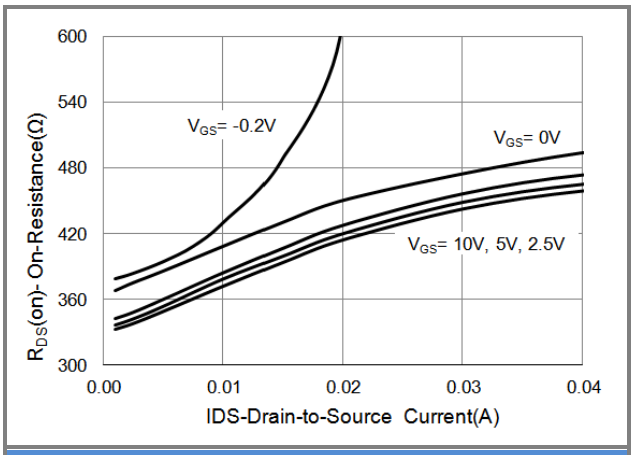


Fig.3 On-Resistance vs. Drain Current

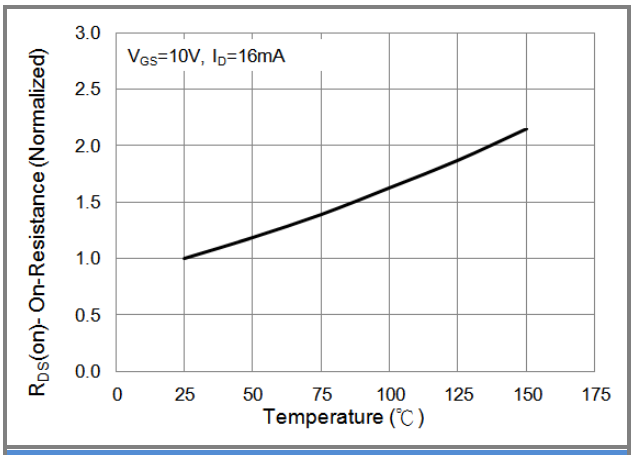


Fig.4 On-Resistance vs. Junction Temperature

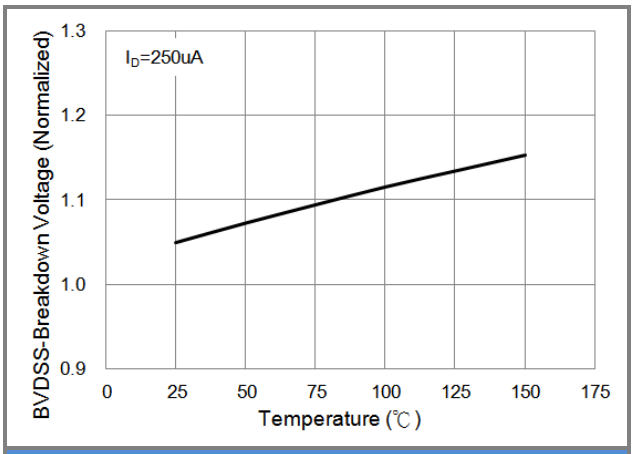


Fig.5 BV_{DSS} vs. Junction Temperature

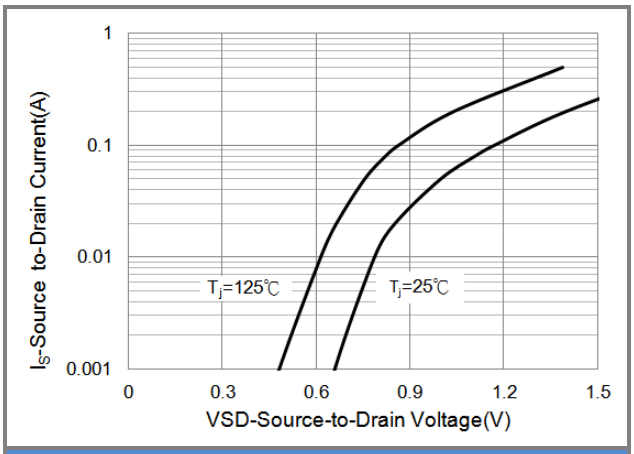


Fig.6 Source-Drain Diode Forward Voltage

BSS126

TYPICAL CHARACTERISTIC CURVES

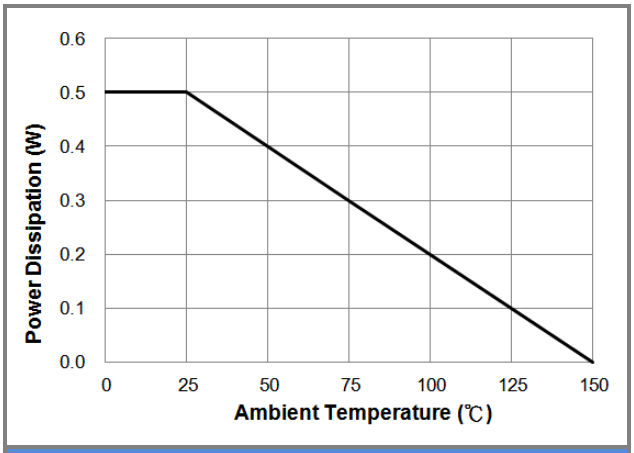


Fig.7 Power Dissipation vs. Case Temperature

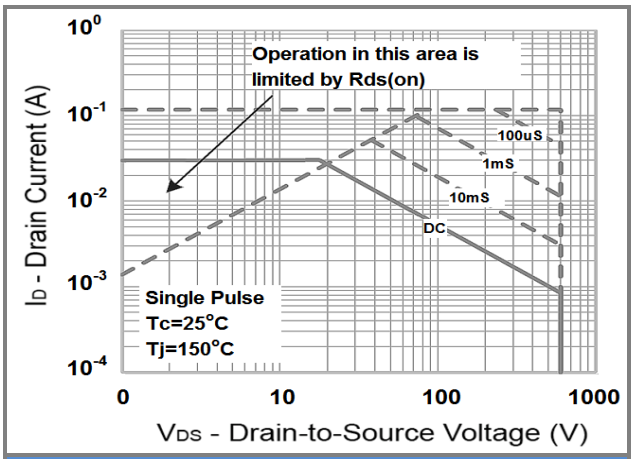


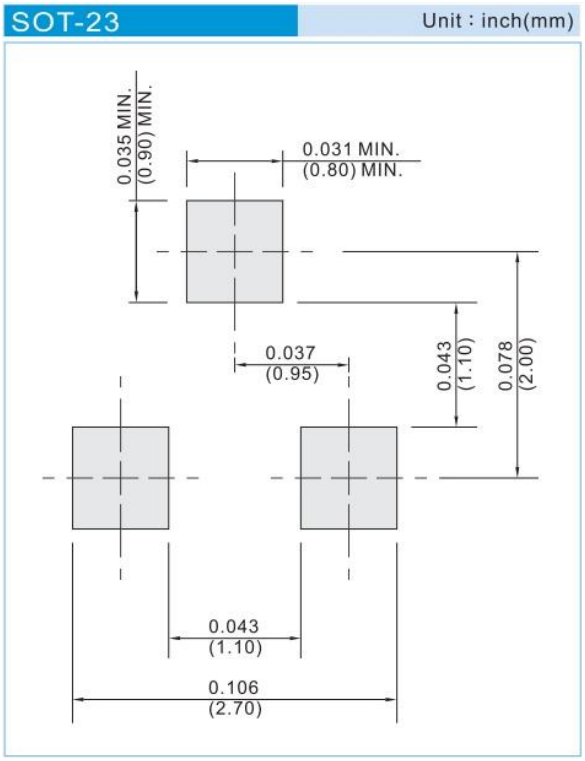
Fig.8 Maximum Safe Operating Area

BSS126

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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