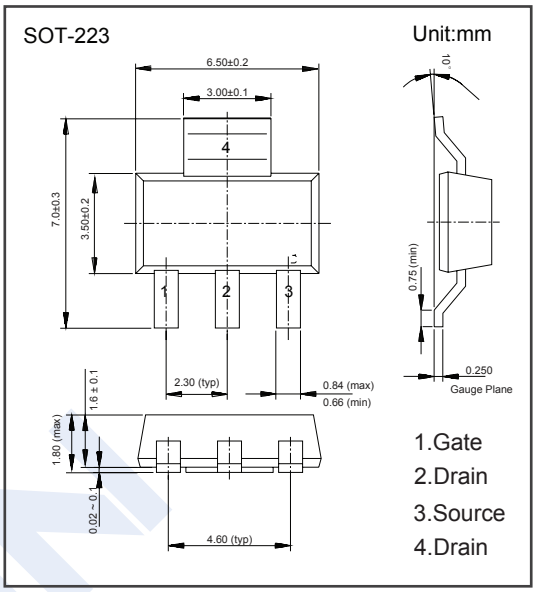
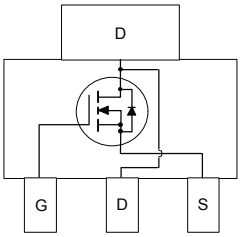
N-Channel MOSFET

BSP126 (KSP126)



■ Features

- V_{DS} (V) = 250V
- I_D = 350mA
- $R_{DS(ON)}$ < 7Ω @ V_{GS} = 10V
- Direct interface to C-MOS, TTL,etc.
- High-speed switching.
- No secondary breakdown.



■ Absolute Maximum Ratings (T_A = 25℃ unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	250	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	350	mA
Pulsed Drain Current	I_{DM}	1.2	A
Power Dissipation	P_D	1.5	W
Thermal Resistance.Junction- to-Ambient (Note 1)	$R_{th\ j\text{-}a}$	83.3	K/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-65 to 150	

Note 1. Device mounted on an epoxy printed-circuit board 40 mm×40 mm×1.5 mm; mounting pad for the drain lead min.6cm^2.

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■ Electrical Characteristics T_A = 25℃ unless otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=10 μA, V_{GS}=0V	250			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=200V, V_{GS}=0V			1	μA
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=1mA	0.8		2	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V, I_D=300mA			7	Ω
		V_{GS}=2.4V, I_D=20mA			10	
Forward Transconductance	g_{FS}	V_{DS}=25V, I_D=300mA	200			mS
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=25V, f=1MHz		65	90	pF
Output Capacitance	C_{oss}			20	30	
Reverse Transfer Capacitance	C_{rss}			5	15	
Switching times (see Figs 2 and 3)	t_{on}	V_{DD}=50V, I_D = 250mA, V_{GS}=0 to 10V		5	10	ns
	t_{off}			20	30	
Diode Forward Voltage	V_{SD}	I_S=350mA,V_{GS}=0V			1.2	V

■ Marking

Marking	BSP126

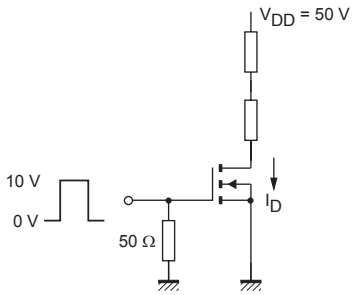

Fig.2 Switching time test circuit.

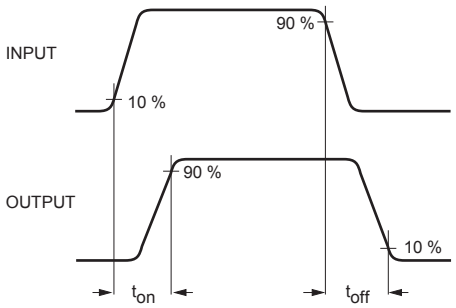

Fig.3 Input and output waveforms.

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■ Typical Characterisitics

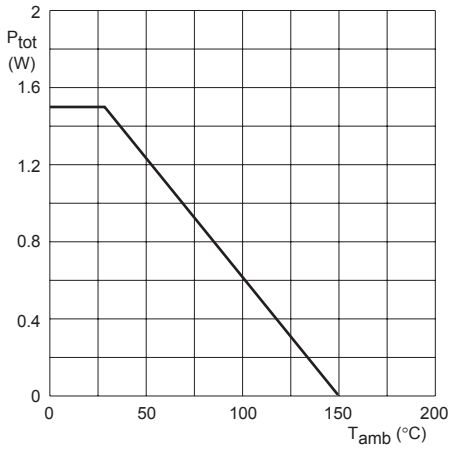

Fig.4 Power derating curve.

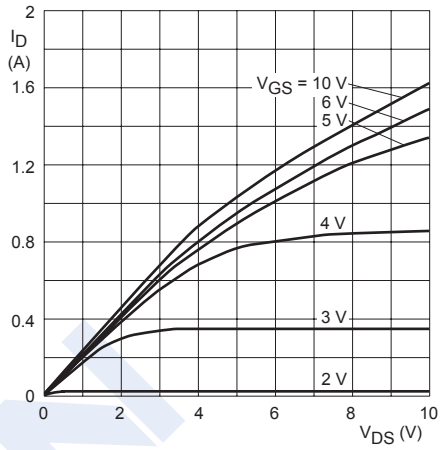

Fig.5 Output characteristics; T_j = 25 °C; typical values.

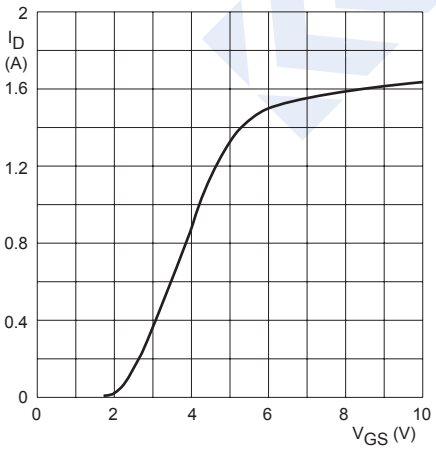

Fig.6 Transfer characteristic; V_{DS} = 10 V; T_j = 25 °C; typical value.

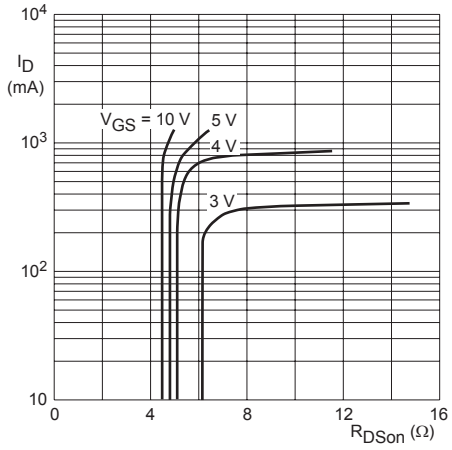

Fig.7 On-resistance as a function of drain current; T_j = 25 °C; typical values.

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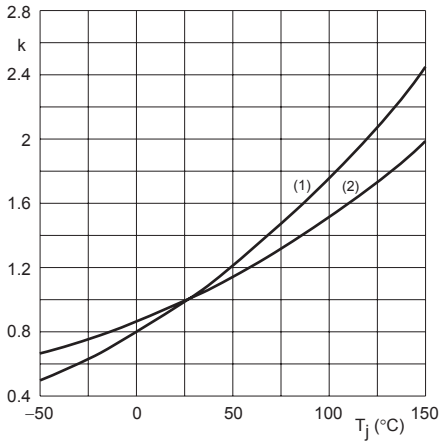

Fig.8 $k = \frac{R_{DS(on)} \text{ at } T_j}{R_{DS(on)} \text{ at } 25\ °C}$; typical values.

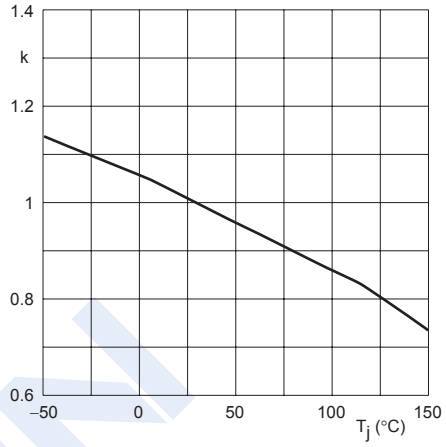

Fig.9 $k = \frac{V_{GS(th)} \text{ at } T_j}{V_{GS(th)} \text{ at } 25\ °C}$; $V_{GS(th)}$ at 1 mA; typical values.

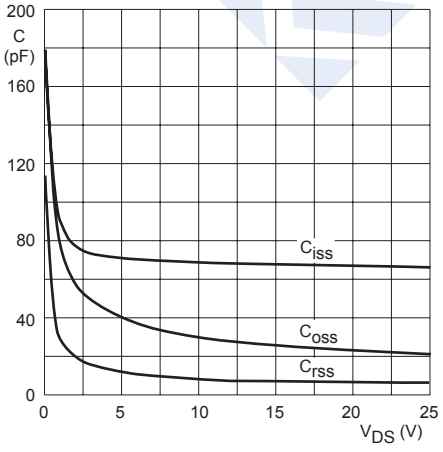

Fig.10 Capacitances as a function of drain-source voltage; V_{GS} = 0; f = 1 MHz; T_j = 25 °C; typical values.