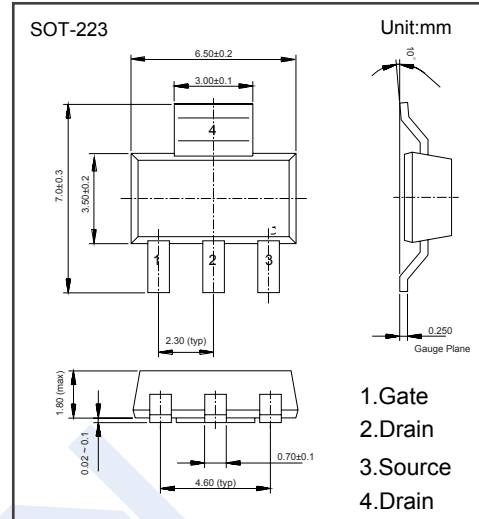
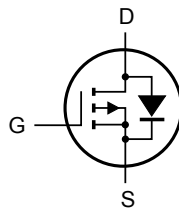


P-Channel MOSFET

BSP230 (KSP230)

■ Features

- $V_{DS} (V) = -300V$
- $I_D = -0.21 A$ ($V_{GS} = -10V$)
- $R_{DS(ON)} < 17 \Omega$ ($V_{GS} = -10V$)
- High-speed switching



■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-300	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	-0.21	A
Pulsed Drain Current	I_{DM}	-0.75	
Power Dissipation	P_D	1.5	W
Thermal Resistance, Junction- to-Ambient	R_{thJA}	83.3	$^\circ C/W$
Junction Temperature	T_J	150	$^\circ C$
Junction Storage Temperature Range	T_{stg}	-65 to 150	

■ Electrical Characteristics $T_a = 25^\circ C$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	$I_D = -250 \mu A$, $V_{GS} = 0V$	-300			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -240V$, $V_{GS} = 0V$			-100	nA
Gate-Body leakage current	I_{GSS}	$V_{DS} = 0V$, $V_{GS} = \pm 20V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = -1mA$	-1.7		-2.55	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = -10V$, $I_D = -170mA$			17	Ω
Forward Transconductance	g_{FS}	$V_{DS} = -25V$, $I_D = -170mA$	100			ms
Input Capacitance	C_{iss}	$V_{GS} = 0V$, $V_{DS} = -25V$, $f = 1MHz$			90	pF
Output Capacitance	C_{oss}				30	
Reverse Transfer Capacitance	C_{rss}				15	
Turn-On DelayTime	$t_{d(on)}$	$V_{GS} = 0$ to $-10V$, $V_{DS} = -50V$, $I_D = -250mA$			10	ns
Turn-Off DelayTime	$t_{d(off)}$				30	

P-Channel MOSFET

BSP230 (KSP230)

■ Typical Characteristics

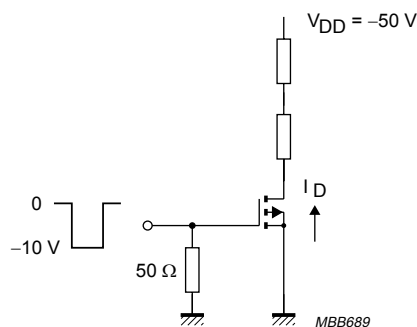


Fig.1 Switching time test circuit.

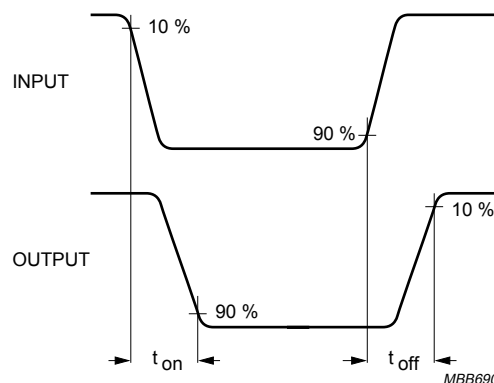


Fig.2 Input and output waveforms.

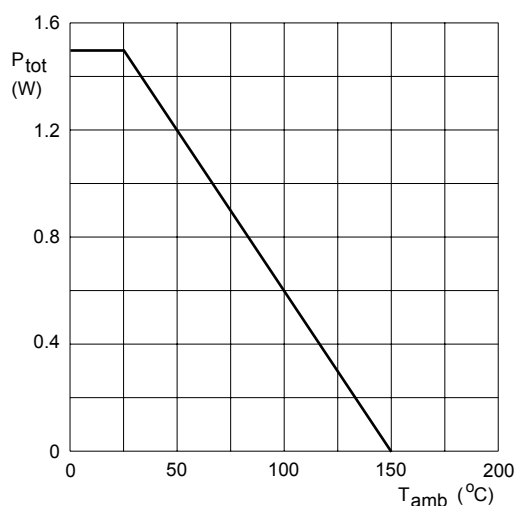


Fig.3 Power derating curve.

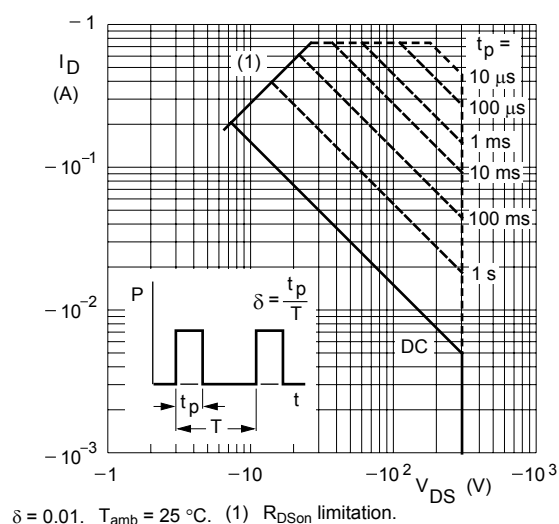


Fig.4 DC SOAR.

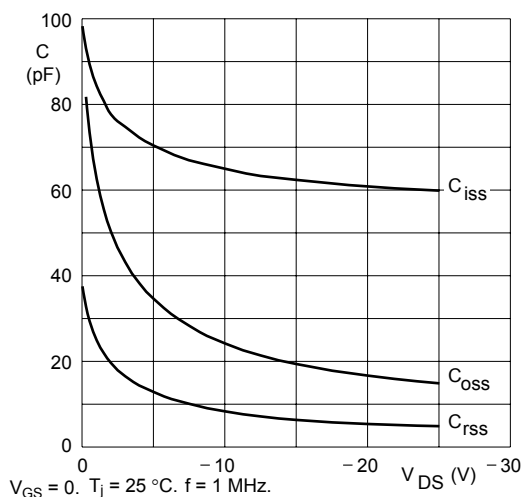


Fig.5 Capacitance as a function of drain source voltage; typical values.

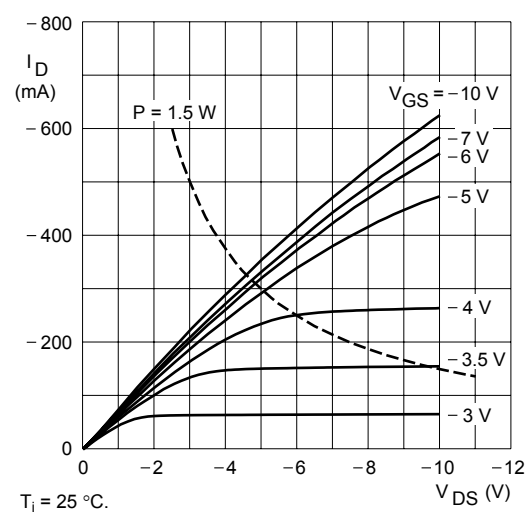
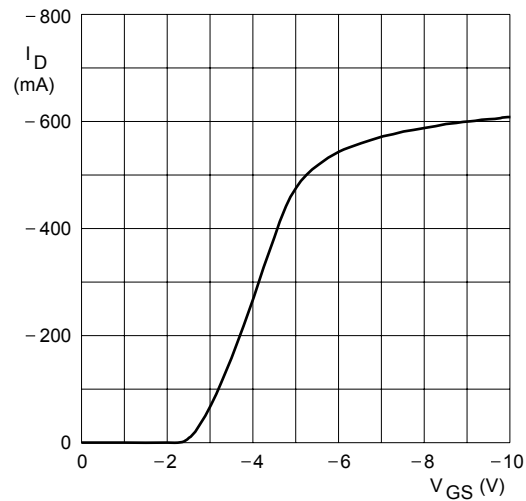


Fig.6 Typical output characteristics.

P-Channel MOSFET

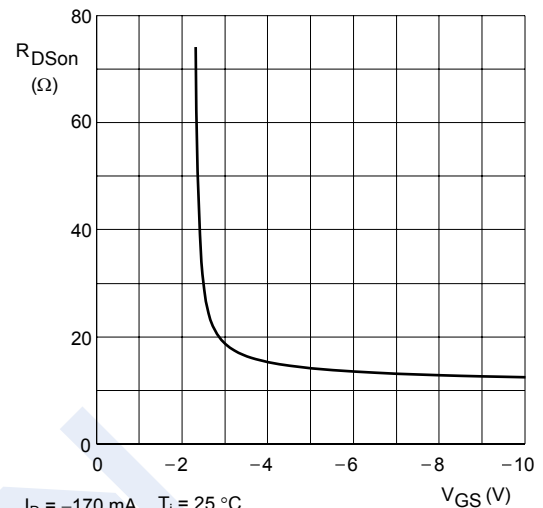
BSP230 (KSP230)

■ Typical Characteristics



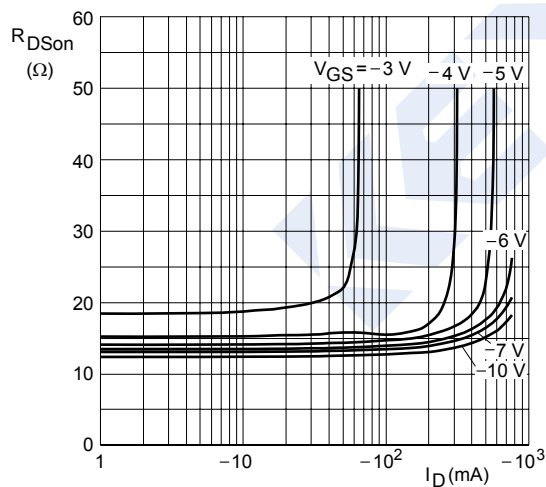
$V_{DS} = -25 \text{ V}$, $T_J = 25 \text{ }^{\circ}\text{C}$.

Fig.7 Typical transfer characteristics.



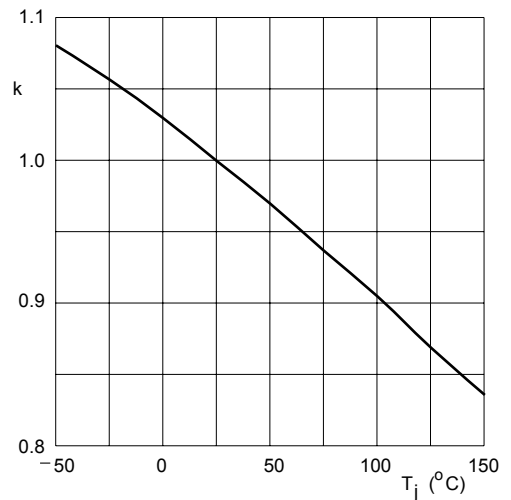
$I_D = -170 \text{ mA}$, $T_J = 25 \text{ }^{\circ}\text{C}$.

Fig.8 Drain-source on-state resistance as a function of gate-source voltage; typical values.



$T_J = 25 \text{ }^{\circ}\text{C}$.

Fig.9 Drain-source on-state resistance as a function of drain current; typical values.



$$k = \frac{V_{GSth} \text{ at } T_J}{V_{GSth} \text{ at } 25^{\circ}\text{C}}$$

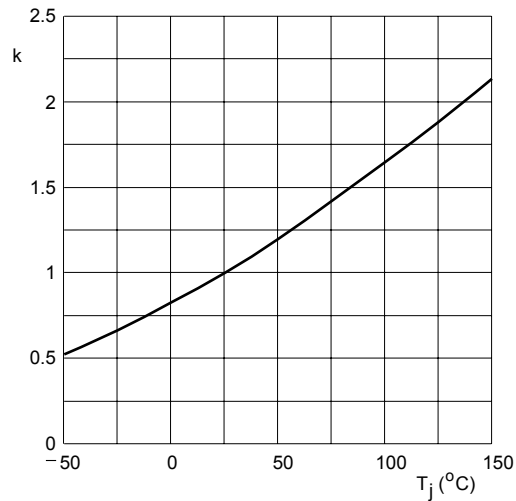
Typical V_{GSth} at $I_D = -1 \text{ mA}$; $V_{DS} = V_{GS}$.

Fig.10 Temperature coefficient of gate-source threshold voltage.

P-Channel MOSFET

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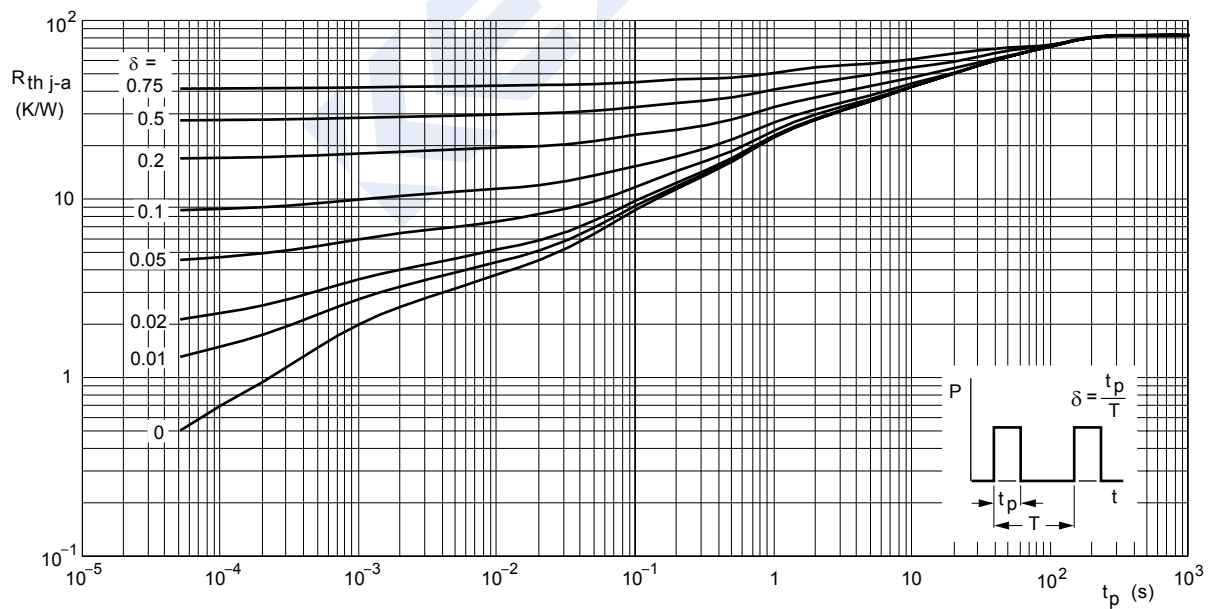
■ Typical Characteristics



$$k = \frac{R_{\text{DSon}} \text{ at } T_j}{R_{\text{DSon}} \text{ at } 25^{\circ}\text{C}}$$

Typical R_{DSon} at $I_D = -170 \text{ mA}$; $V_{\text{GS}} = -10 \text{ V}$.

Fig.11 Temperature coefficient of drain-source on-state resistance.



$T_{\text{amb}} = 25^{\circ}\text{C}$.

Fig.12 Transient thermal resistance from junction to ambient as a function of pulse time; typical values.