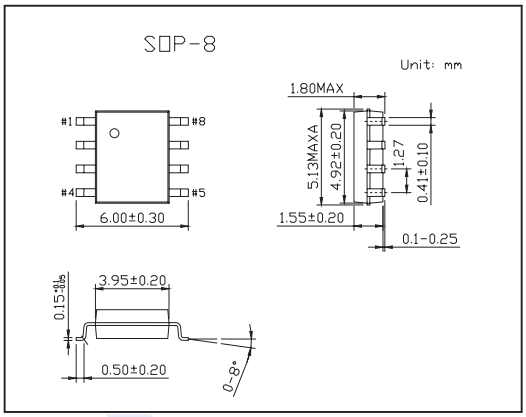
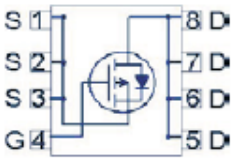
MOS Small Signal Transistor

KSO200P03S(BSO200P03S)

■ Features

- P-Channel
- Enhancement mode
- Logic level
- Avalanche rated
- dv /dt rated
- Ideal for fast switching buck converter





■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	≤10 secs	steady state	Unit
Continuous drain current TA=25℃	ID	-9.1	-7.4	A
TA=70℃		-7.3	-5.9	
Pulsed drain current TA=25 ℃	I DP	-37		A
Avalanche energy, single pulse *1	EAS	98		mJ
Reverse diode dv /dt *2	dv /dt	-6		kV/μs
Gate source voltage	VGS	±25		V
Power dissipation	PD	2.36	1.56	W
Thermal resistance,junction - soldering point	RthJS	35		K/W
Thermal resistance,junction - ambient	RthJA	110		K/W
Operating and storage temperature	T j, T stg	-55 to 150		℃

*1 ID=-9.1A, RGS=25 Ω

*2 ID=-9.1A, VDS=20 V,di /dt =200 A/μs,Tj,max=150℃

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-source breakdown voltage	V_{DSS}	V_{GS}=0 V, I_D=-250μA	-30			V
Zero gate voltage drain current	I_{DSS}	V_{DS}=-30V, V_{GS}=0V,T_j=25℃		-0.1	-1	μA
		V_{DS}=-30 V, V_{GS}=0 V,T_j=125℃		-10	-100	
Gate-source leakage current	I_{GSS}	V_{GS}=±25 V, V_{DS}=0 V			±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-100μA	-1	-1.5		V
Drain-source on-state resistance	$R_{DS(on)}$	V_{GS}=-10 V, I_D=-9.1A		16.7	20.0	mΩ
Forward Transconductance	g_{fs}	|V_{DS}|>2|I_D|$R_{DS(on)max}$,I_D=-7.3 A	11	21		S
Input capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-25V,f =1 MHz		1750	2330	pF
Output capacitance	C_{oss}			470	625	
Reverse transfer capacitance	C_{rss}			390	580	
Turn-on delay time	$t_{d(on)}$	V_{DD}=-15 V,V_{GS}=-10 V,I_D=-1A, R_G=6Ω		10	53	ns
Rise time	t_r			11	17	
Turn-off delay time	$t_{d(off)}$			42	63	
Fall time	t_f			33	50	
Gate to source charge	Q_{gs}	V_{DD}=-24V, I_D=9.1A,V_{GS}=0 to-10 V		4.8	6.4	nC
Gate charge at threshold	$Q_{g(th)}$			2.6	3.5	
Gate to drain charge	Q_{gd}			14		
Switching charge	Q_{sw}			16	24	
Gate charge total	Q_g			40	54	
Output charge	Q_{oss}	V_{DD}=-15V, V_{GS}=0V		14	19	nC
Reverse recovery time	trr	V_R=15V, I_F=-9.1A,di_F/dt =100A/μs		19	24	ns
Reverse recovery charge	Q_{rr}			9	11	nC
Diode continous forward current	I_S	T_A=25℃			-2.1	A
Diode pulse curret	I_{SM}				-36.5	A
Diode forward voltage	V_{SD}	V_{GS}=0 V, I_F=-9.1 A,T_j=25℃		-0.88	-1.2	V