Ordering number : ENN8058

查询"2SK3821"供应商

SANYO Semiconductors

DATA SHEET

2SK3821 — N-Channel Silicon MOSFET General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- 4V drive.
- Ultrahigh-speed switching.
- Motor drive, DC / DC converter.
- Avalanche resistance guarantee.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		100	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		40	A
Drain Current (Pulse)	I_{DP}	PW≤10µs, duty cycle≤1%	160	A
Allowable Power Dissipation	P_D		1.65	W
		Tc=25°C	65	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C
Avalanche Energy (Single Pulse) *1	E_{AS}		200	mJ
Avalanche Current *2	I_{AV}		40	A

Note : *1 V_{DD}=20V, L=200µH, I_{AV}=40A

*2 L≤200µH, single pulse

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=1mA, V_{GS}=0	100			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V, V_{GS}=0			1	µA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}= ±16V, V_{DS}=0			±10	µA
Cutoff Voltage	$V_{GS(off)}$	V_{DS}=10V, I_D=1mA	1.2		2.6	V
Forward Transfer Admittance	|yfs|	V_{DS}=10V, I_D=20A	18.5	31		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	I_D=20A, V_{GS}=10V		25	33	mΩ
	$R_{DS(on)2}$	I_D=20A, V_{GS}=4V		30	42	mΩ

Marking : K3821

Continued on next page.

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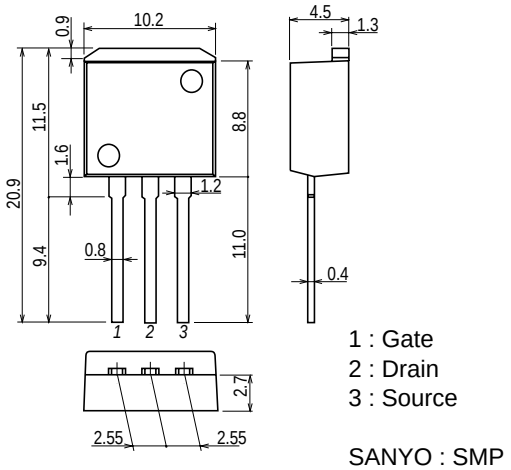
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		4200		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		300		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		250		pF
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		30		ns
Rise Time	t_r	See specified Test Circuit.		68		ns
Turn-OFF Delay Time	t_d(off)	See specified Test Circuit.		300		ns
Fall Time	t_f	See specified Test Circuit.		110		ns
Total Gate Charge	Qg	V_{DS}=50V, V_{GS}=10V, I_D=40A		73		nC
Gate-to-Source Charge	Qgs	V_{DS}=50V, V_{GS}=10V, I_D=40A		12.5		nC
Gate-to-Drain "Miller" Charge	Qgd	V_{DS}=50V, V_{GS}=10V, I_D=40A		16		nC
Diode Forward Voltage	V_{SD}	I_S=40A, V_{GS}=0		1.0	1.2	V

Package Dimensions

unit : mm
2093A



Package Dimensions

unit : mm
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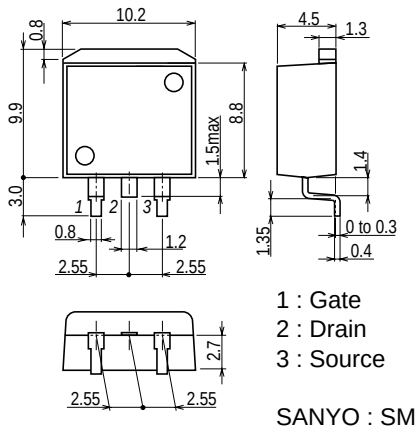
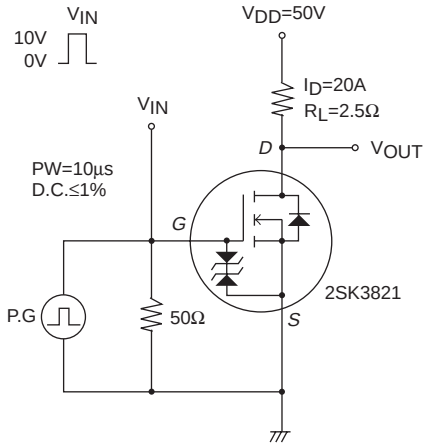
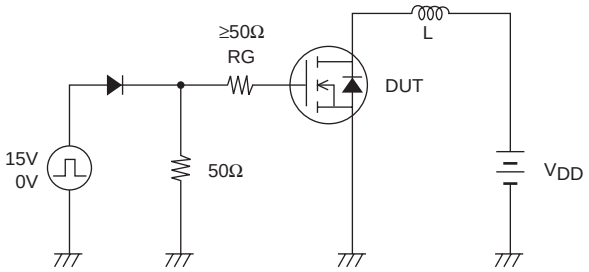


Switching Time Test Circuit



Unclamped Inductive Test Circuit



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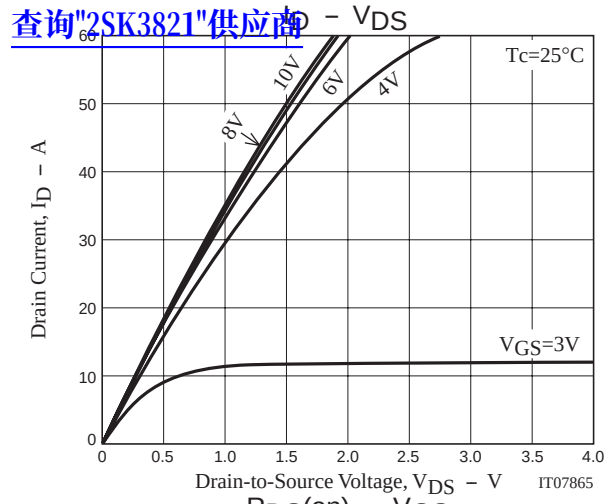

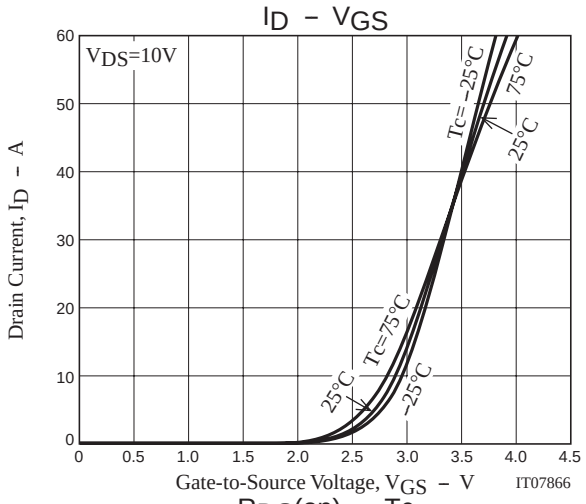

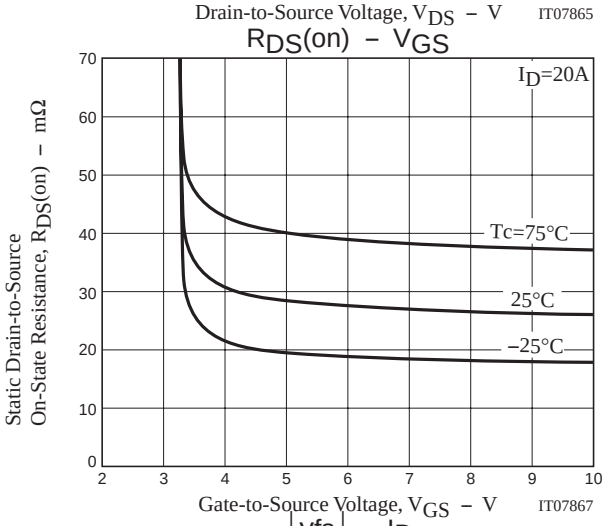

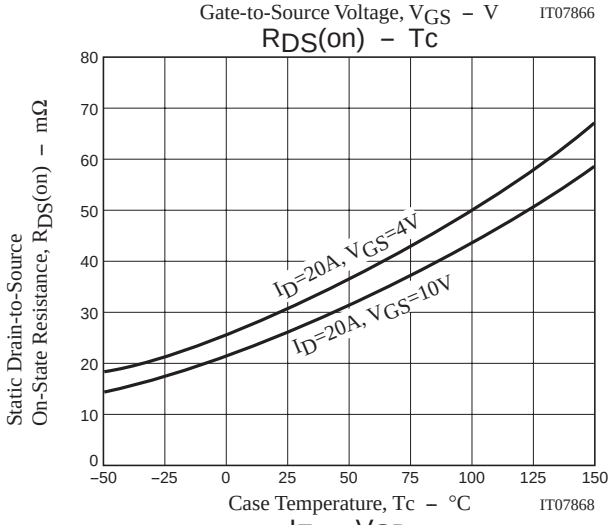

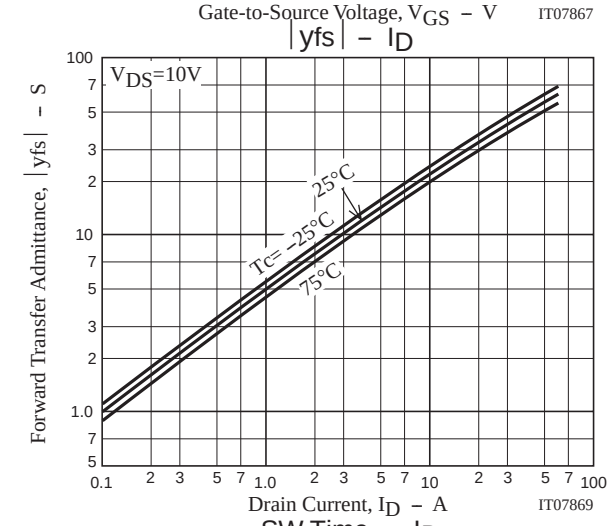

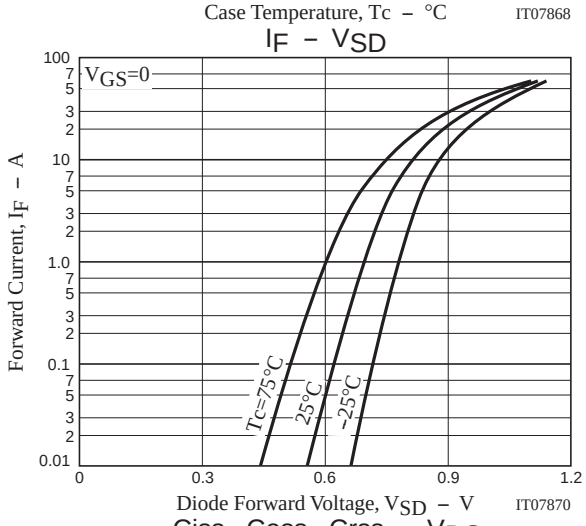

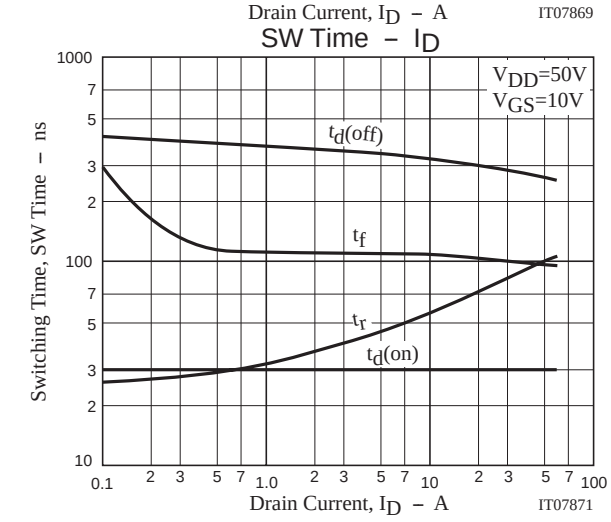

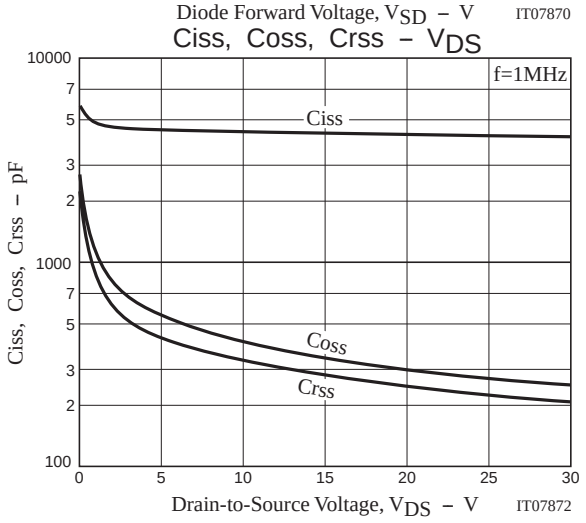

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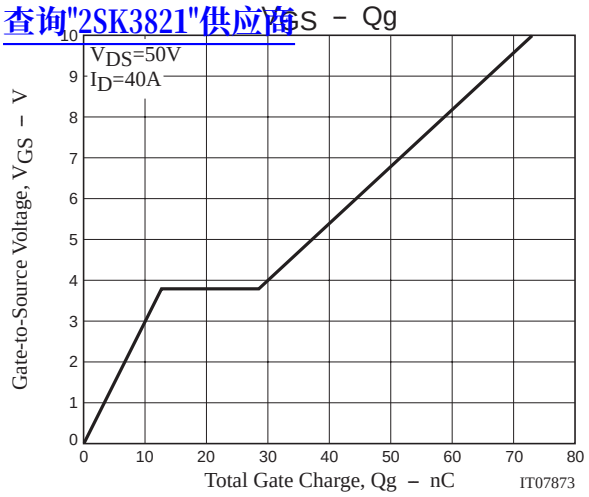

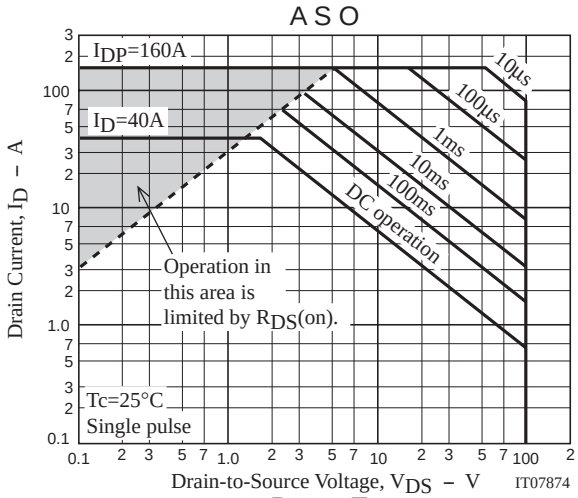

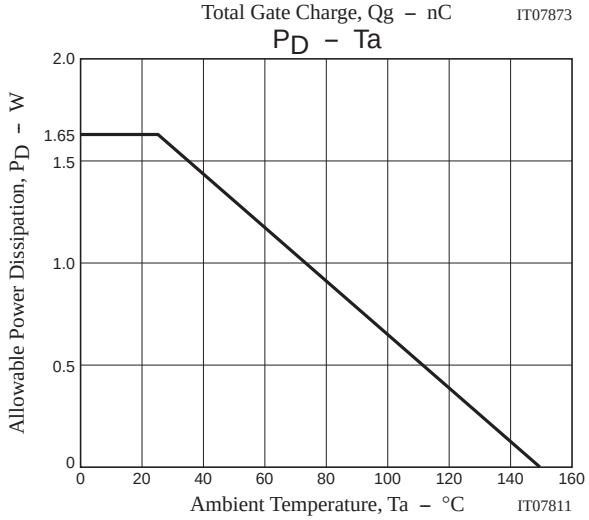

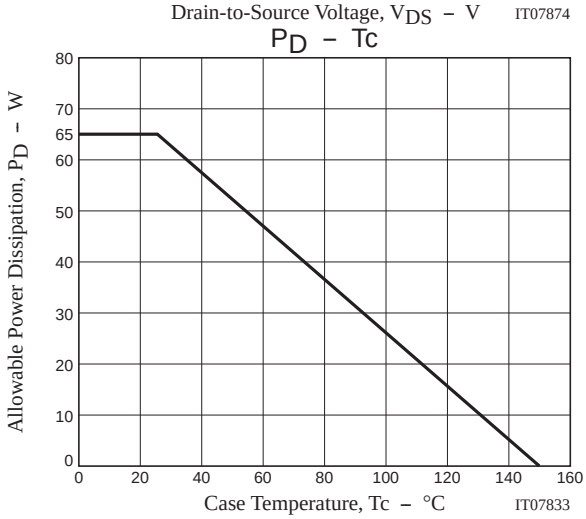

Note on usage : Since the 2SK3821 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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