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ON Semiconductor DATA SHEET

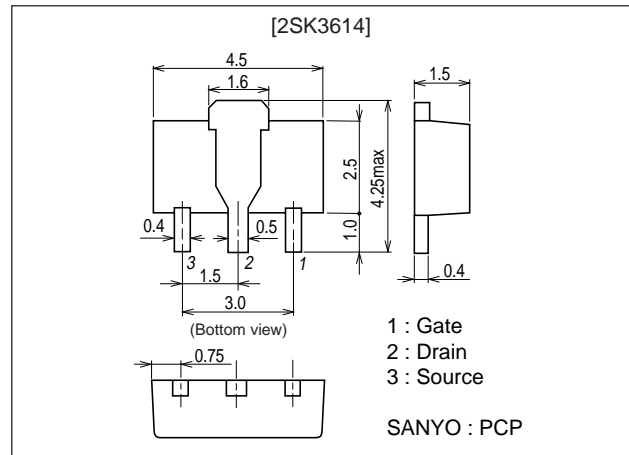
2SK3614 — N-Channel Silicon MOSFET — UltraHigh-Speed Switching Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.

Package Dimensions

unit : mm
2062A



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		60	V
Gate-to-Source Voltage	V _{GSS}		±20	V
Drain Current (DC)	I _D		4	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	16	A
Allowable Power Dissipation	P _D	Mounted on a ceramic board (250mm ² ×0.8mm)	1.5	W
		T _c =25°C	3.5	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

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	60			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, 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	y _{fs}	V _{DS} =10V, I _D =2A	2	3.6		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =2A, V _{GS} =10V		110	145	mΩ
	R _{DS(on)2}	I _D =2A, V _{GS} =4V		150	215	mΩ

Marking : LK

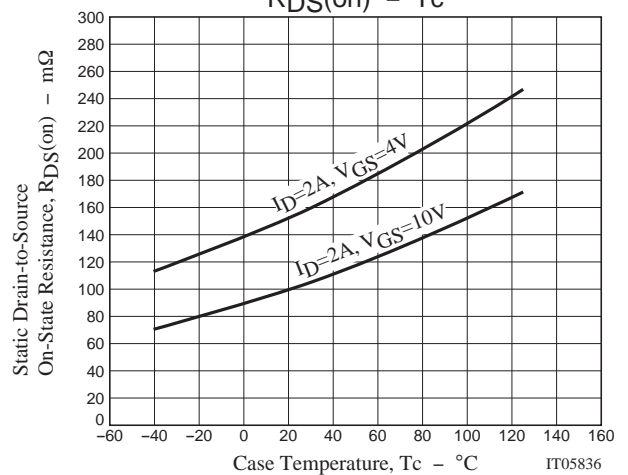
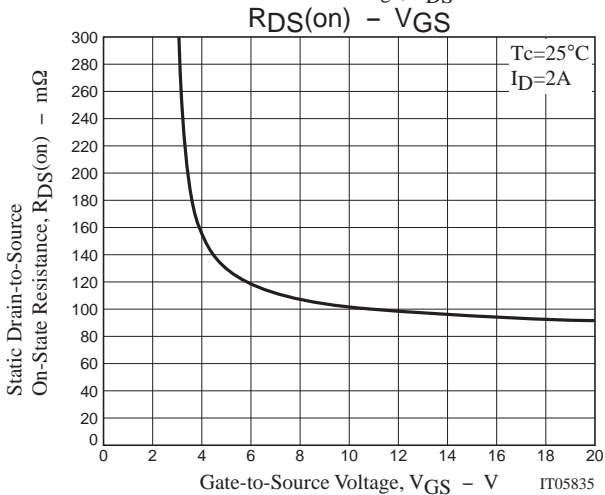
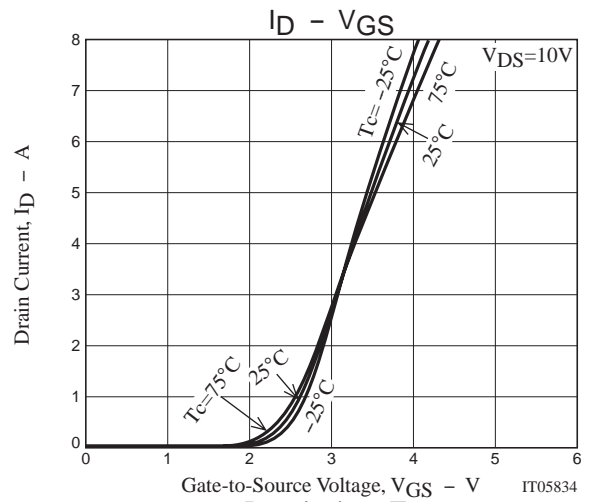
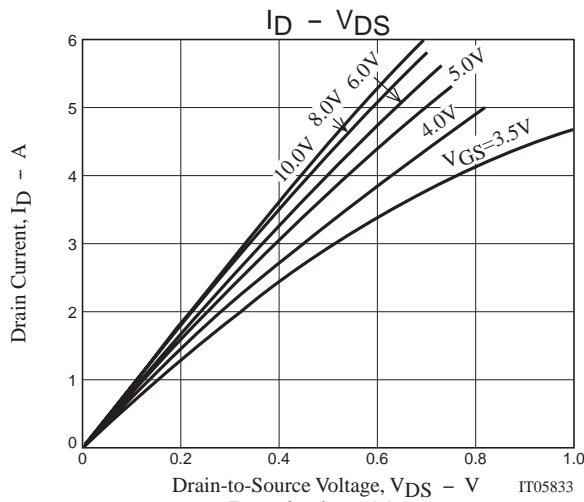
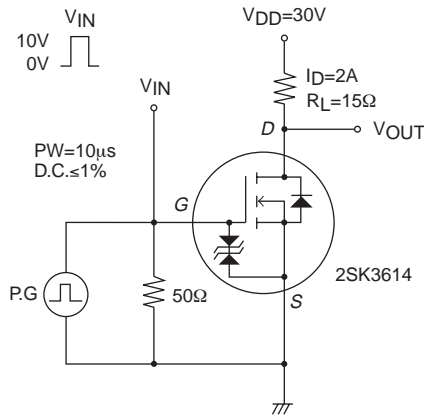
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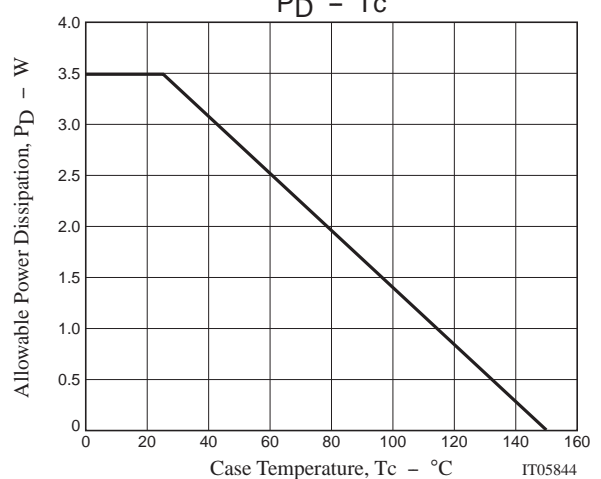
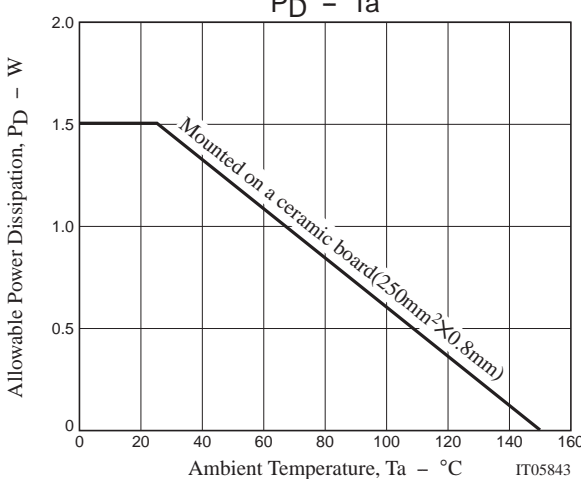
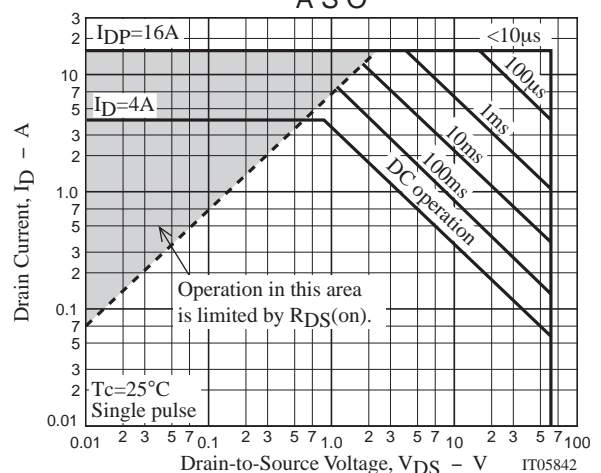
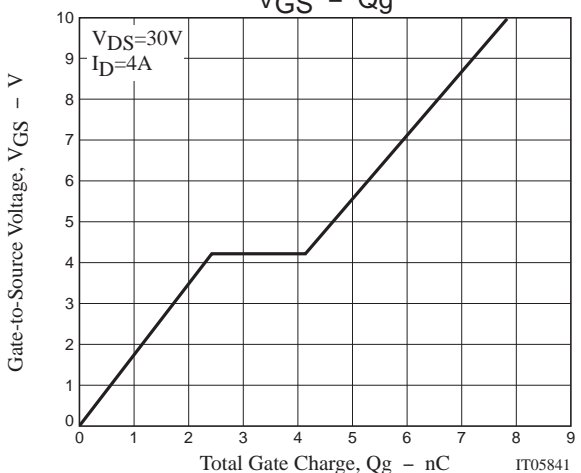
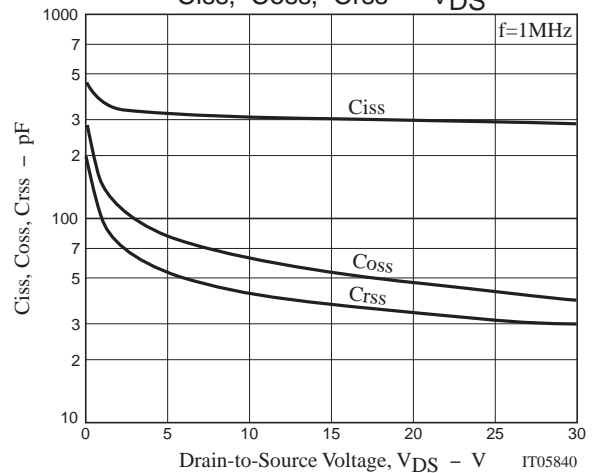
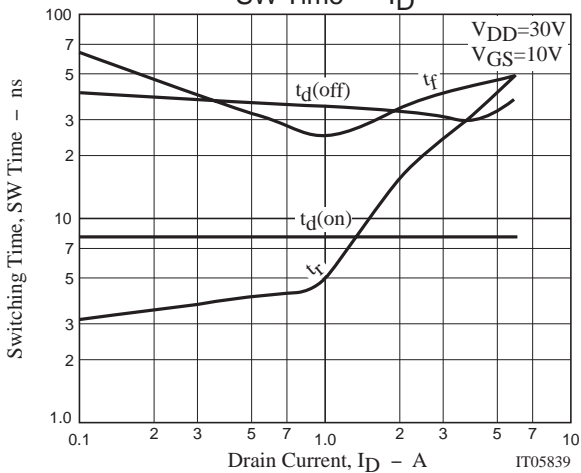
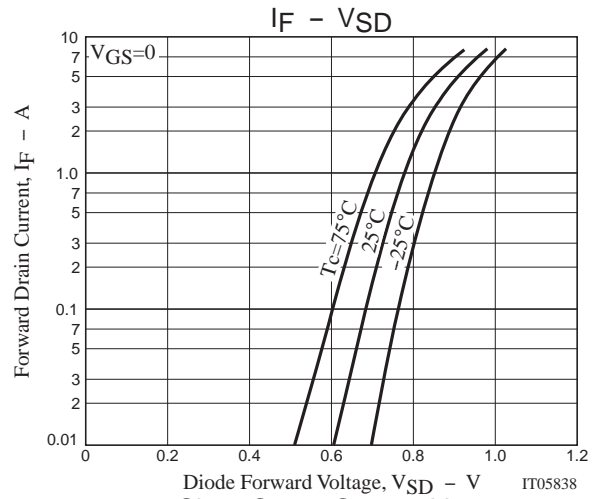
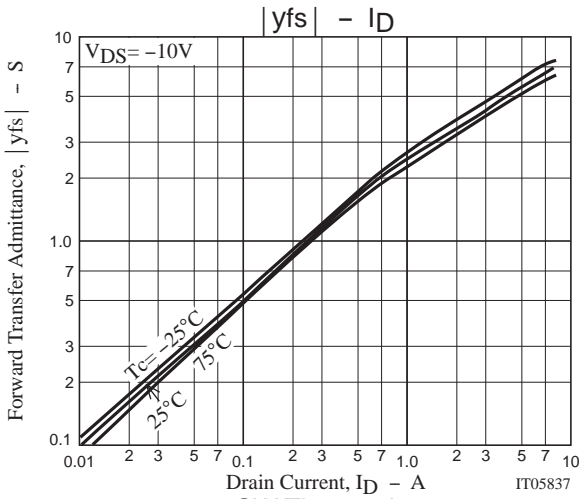
2SK3614

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	C_{iss}	$V_{DS}=20V, f=1MHz$		300		pF
Output Capacitance	C_{oss}	$V_{DS}=20V, f=1MHz$		54		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20V, f=1MHz$		34		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		8		ns
Rise Time	t_r	See specified Test Circuit.		16		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		32		ns
Fall Time	t_f	See specified Test Circuit.		34		ns
Total Gate Charge	Q_g	$V_{DS}=30V, V_{GS}=10V, I_D=4A$		7.8		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=30V, V_{GS}=10V, I_D=4A$		2.4		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=30V, V_{GS}=10V, I_D=4A$		1.7		nC
Diode Forward Voltage	V_{SD}	$I_S=4A, V_{GS}=0$		0.86	1.2	V

Switching Time Test Circuit





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