



SANYO Semiconductors

DATA SHEET

2SK3615

N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

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

Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DS}		60	V
Gate-to-Source Voltage	V_{GS}		± 20	V
Drain Current (DC)	I_D		12	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	48	A
Allowable Power Dissipation	P_D		1	W
		$T_c=25^\circ\text{C}$	20	W
Channel Temperature	T_{ch}		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=1\text{mA}$, $V_{GS}=0\text{V}$	60			V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60\text{V}$, $V_{GS}=0\text{V}$			1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 16\text{V}$, $V_{DS}=0\text{V}$			± 10	μA
Gate-to-Source Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}$, $I_D=1\text{mA}$	1.2		2.6	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$, $I_D=6\text{A}$	4.8	8		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)1}$	$I_D=6\text{A}$, $V_{GS}=10\text{V}$		45	60	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D=6\text{A}$, $V_{GS}=4\text{V}$		60	85	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{DS}=20\text{V}$, $f=1\text{MHz}$		790		pF
Output Capacitance	C_{oss}	$V_{DS}=20\text{V}$, $f=1\text{MHz}$		115		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=20\text{V}$, $f=1\text{MHz}$		88		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		10		ns
Rise Time	t_r	See specified Test Circuit.		40		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		70		ns
Fall Time	t_f	See specified Test Circuit.		60		ns

Marking : K3615

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SANYO Electric Co., Ltd. Semiconductor Company

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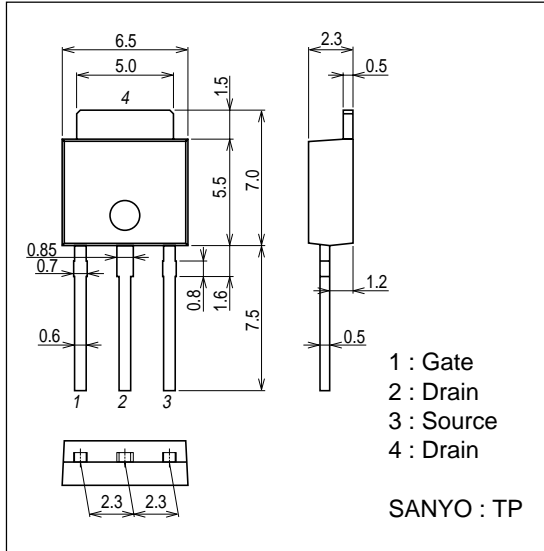
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V _{DS} =30V, V _{GS} =10V, I _D =12A		16		nC
Gate-to-Source Charge	Qgs	V _{DS} =30V, V _{GS} =10V, I _D =12A		4		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =30V, V _{GS} =10V, I _D =12A		3.4		nC
Diode Forward Voltage	V _{SD}	I _S =12A, V _{GS} =0V		1.0	1.2	V

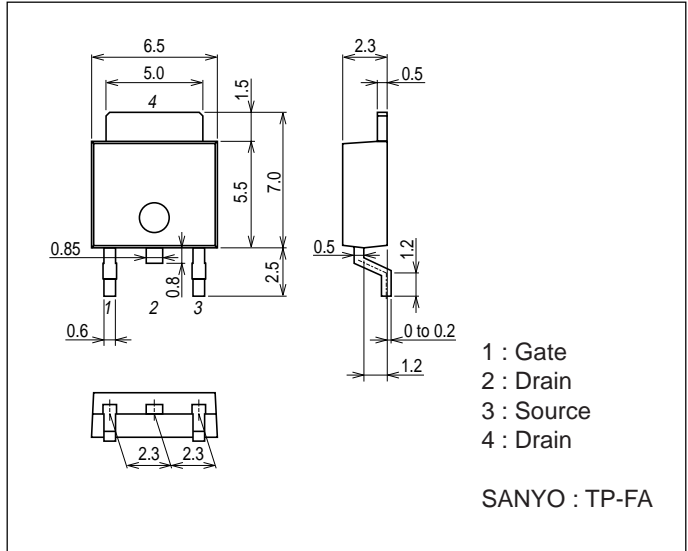
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unit : mm
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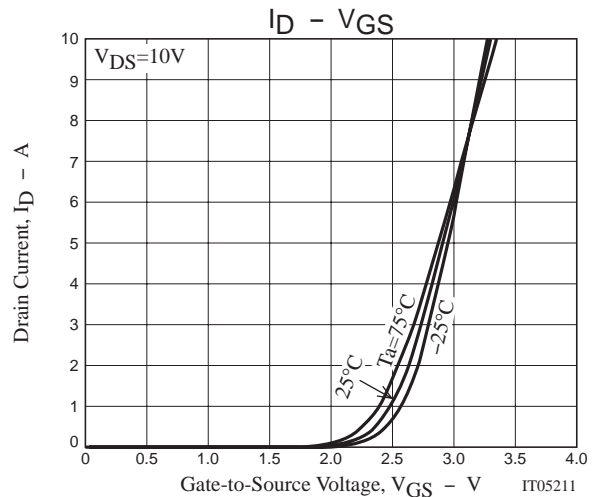
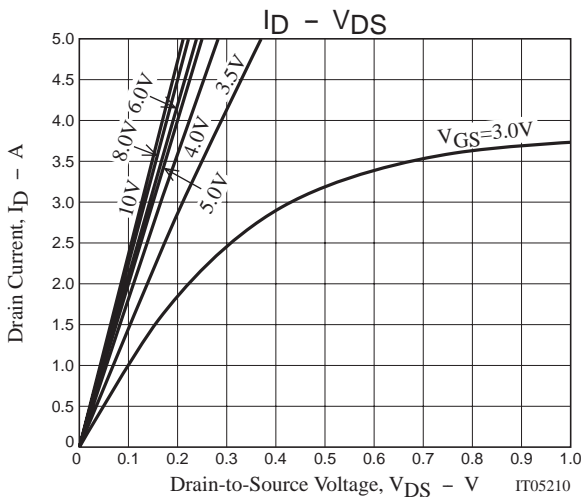
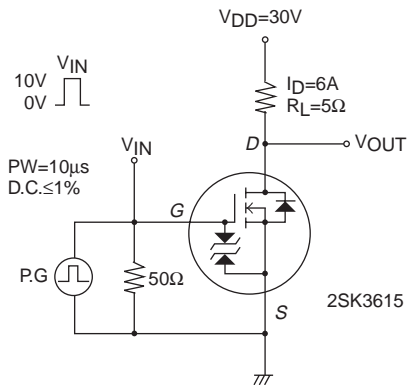


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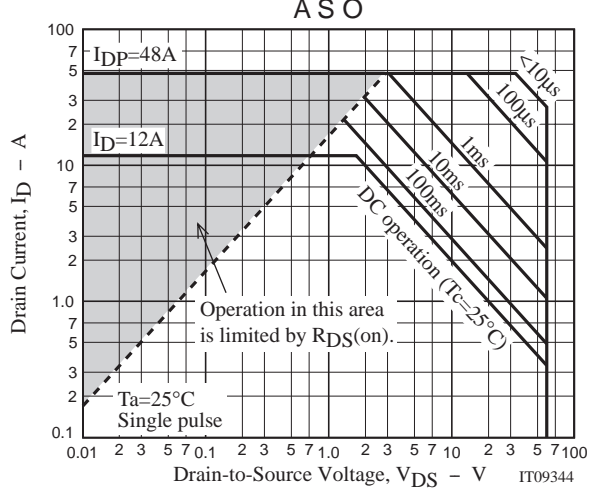
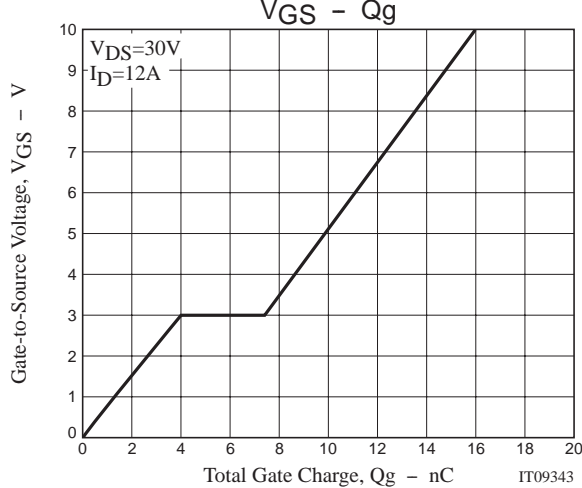
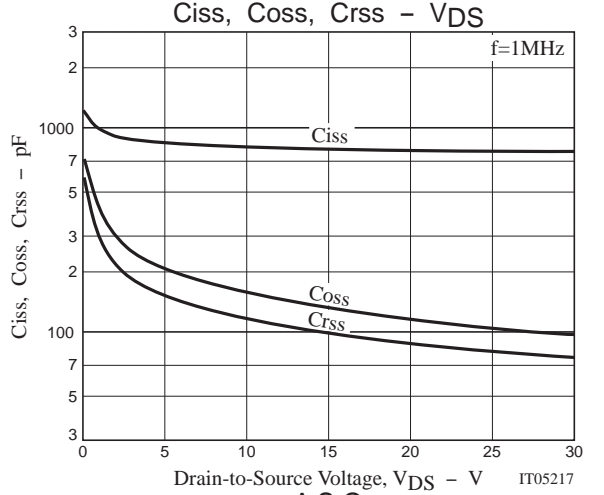
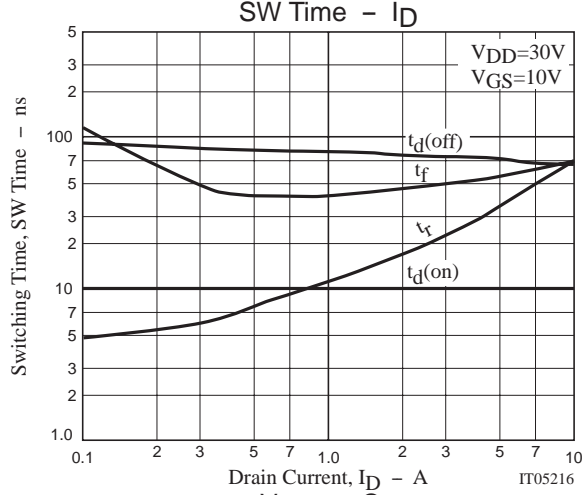
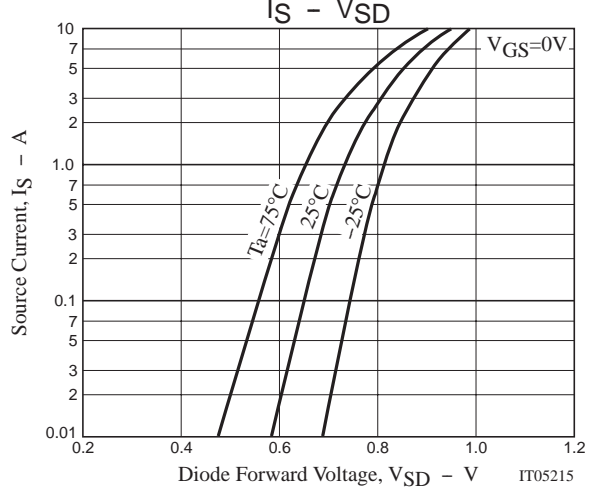
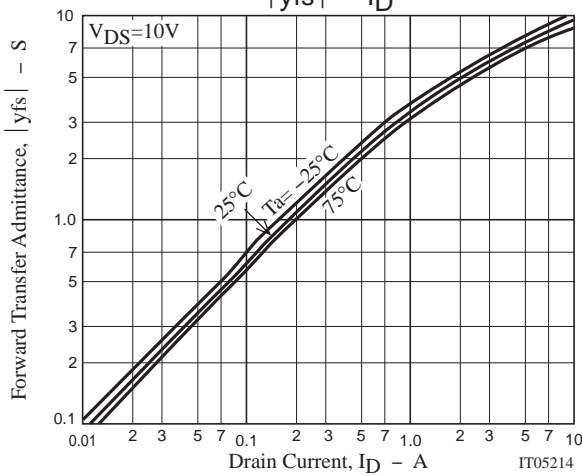
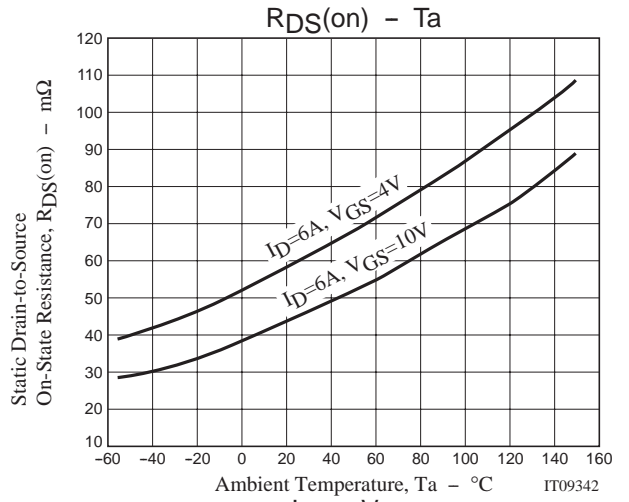
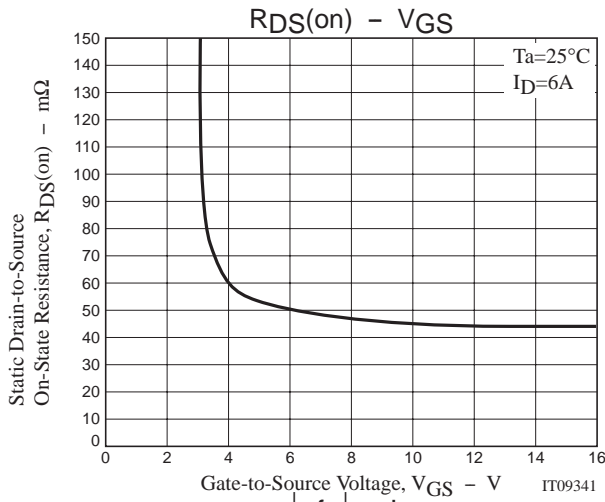
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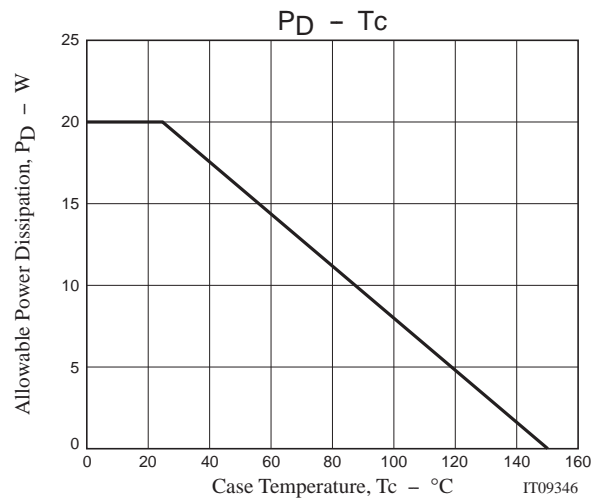
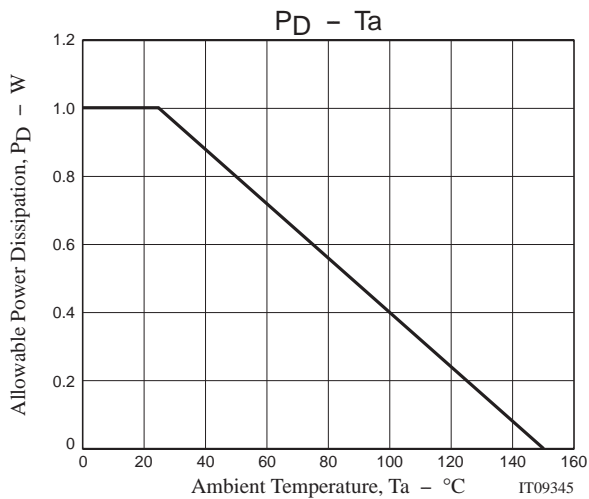
Switching Time Test Circuit



2SK3615



2SK3615



Note on usage : Since the 2SK3615 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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