



2SK3615 — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

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

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		12	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	48	A
Allowable Power Dissipation	P _D		1	W
		T _c =25°C	20	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} =0V	60			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±16V, V _{DS} =0V			±10	μA
Gate-to-Source 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 =6A	4.8	8		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =6A, V _{GS} =10V		45	60	mΩ
	R _{DS(on)2}	I _D =6A, V _{GS} =4V		60	85	mΩ
Input Capacitance	C _{iss}	V _{DS} =20V, f=1MHz		790		pF
Output Capacitance	C _{oss}	V _{DS} =20V, f=1MHz		115		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =20V, f=1MHz		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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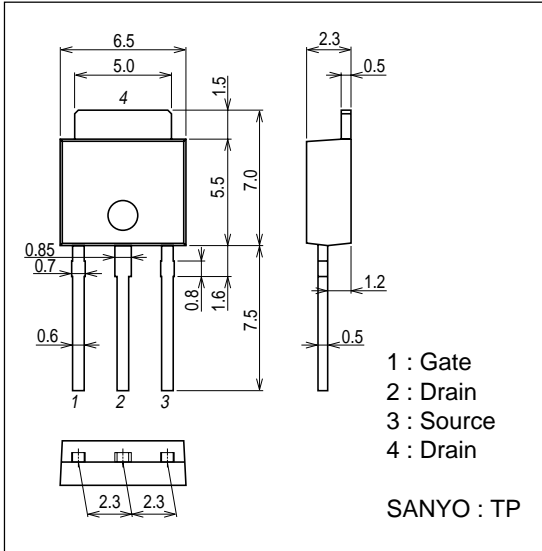
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V _{DS} =30V, V _{GS} =10V, I _D =12A		16		nC
Gate-to-Source Charge	Qgs	V _{DS} =30V, V _{GS} =10V, I _D =12A		4		nC
Gate-to-Drain "Miller" Charge	Qgd	V _{DS} =30V, V _{GS} =10V, I _D =12A		3.4		nC
Diode Forward Voltage	V _{SD}	I _S =12A, V _{GS} =0V		1.0	1.2	V

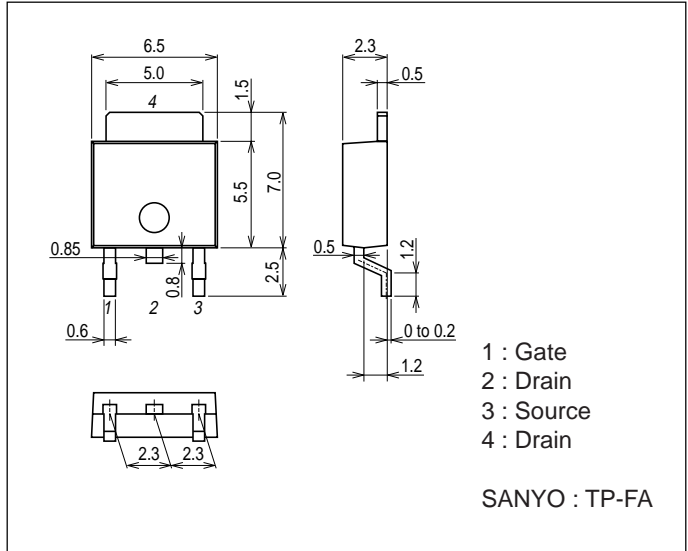
Package Dimensions

unit : mm
 7518-004

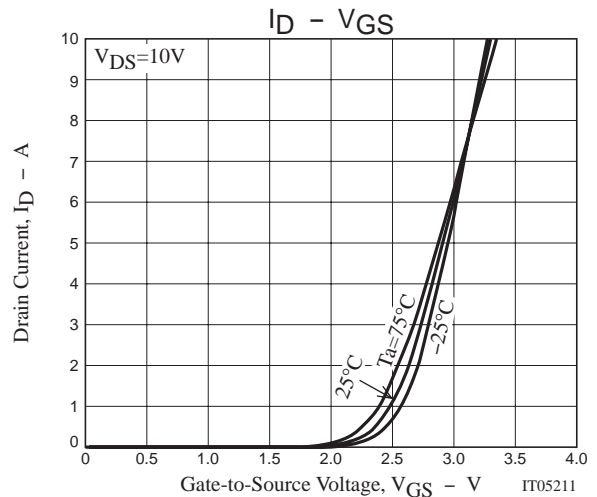
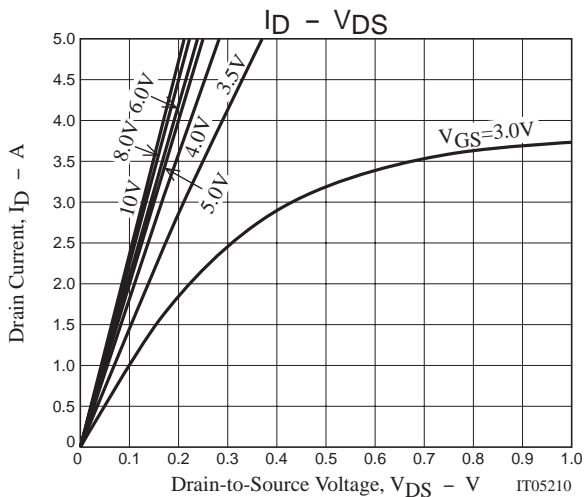
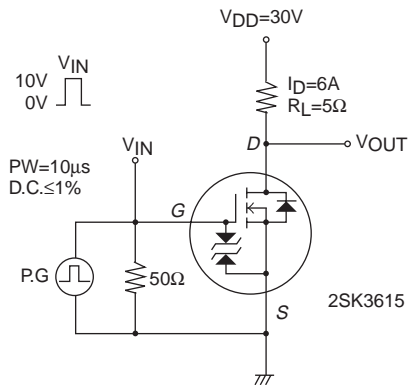


Package Dimensions

unit : mm
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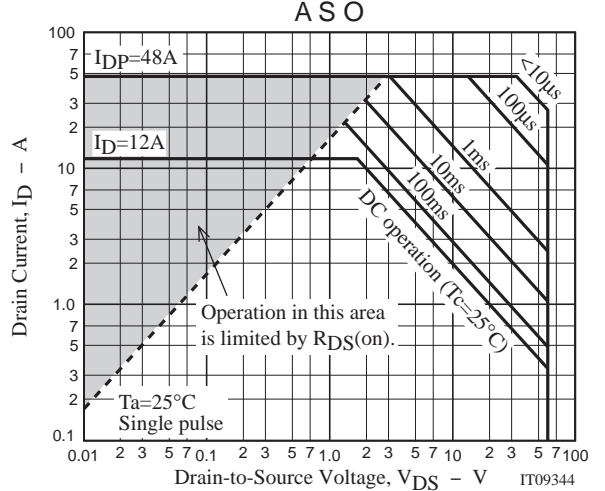
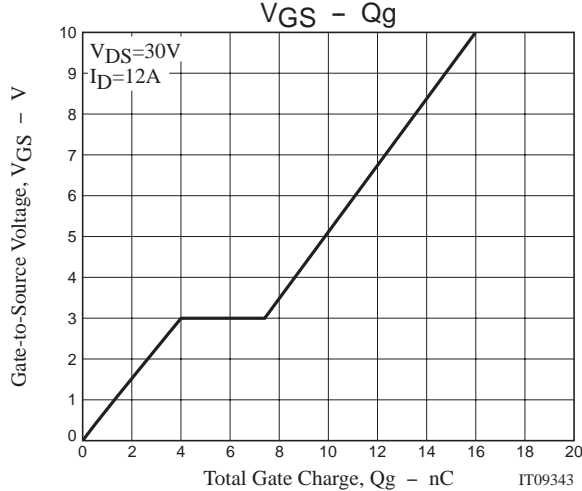
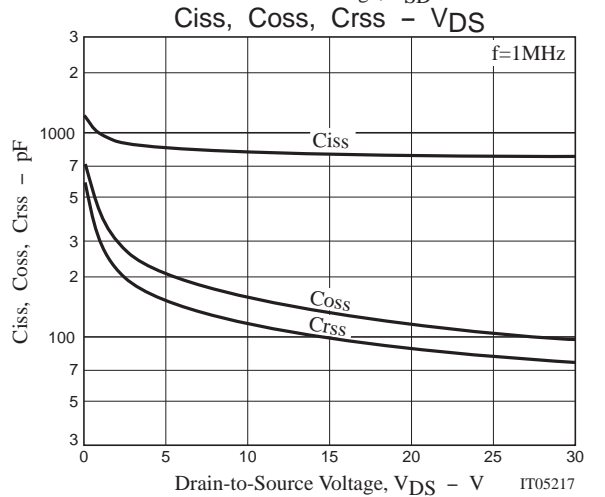
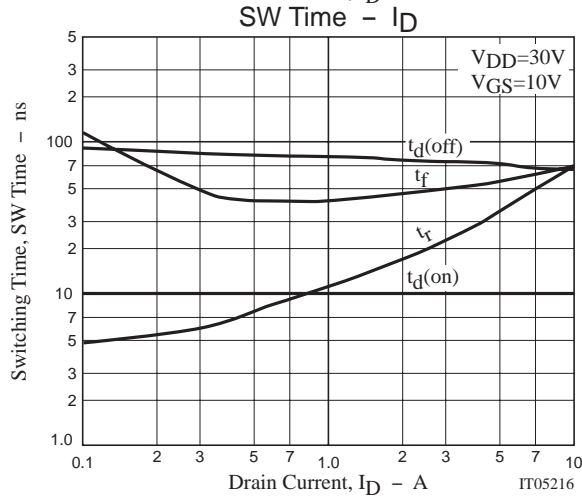
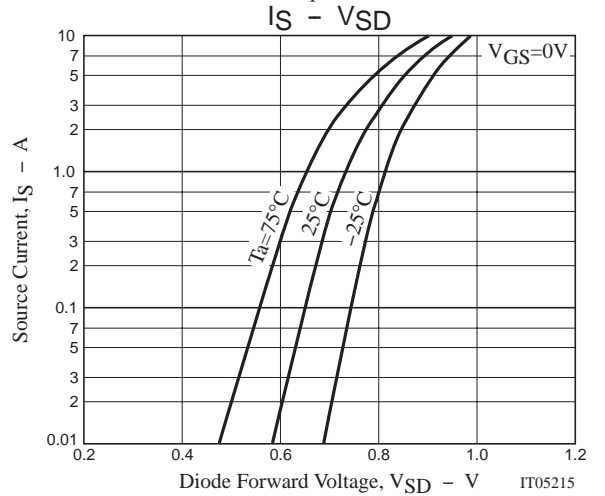
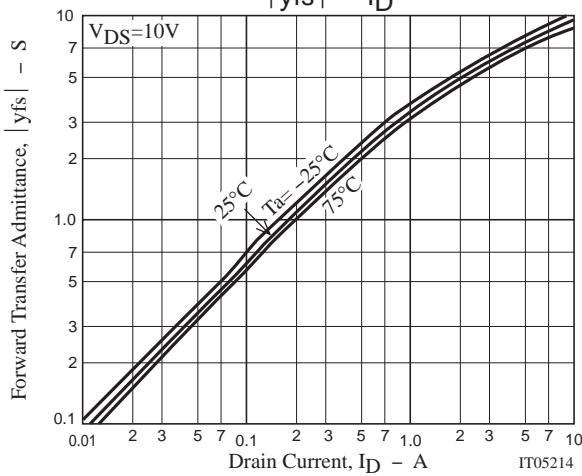
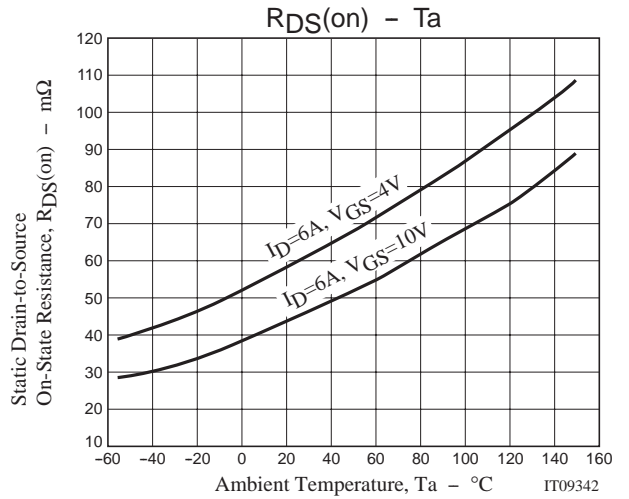
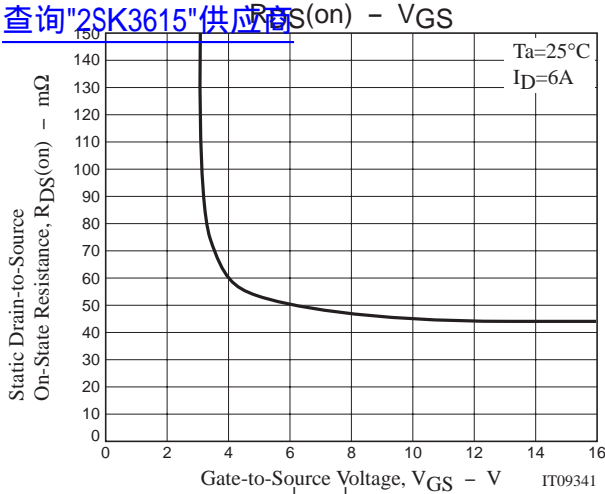


Switching Time Test Circuit



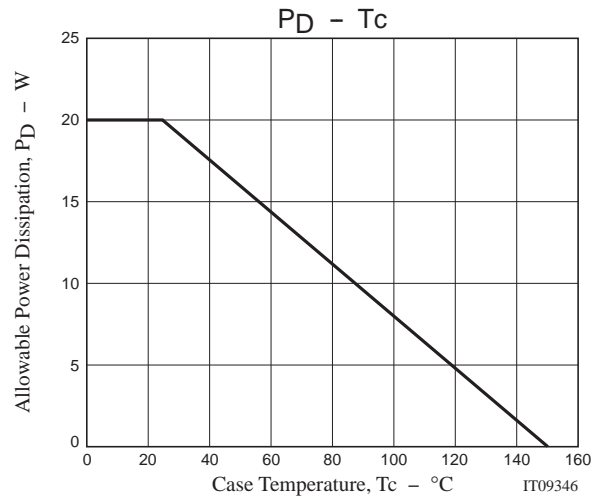
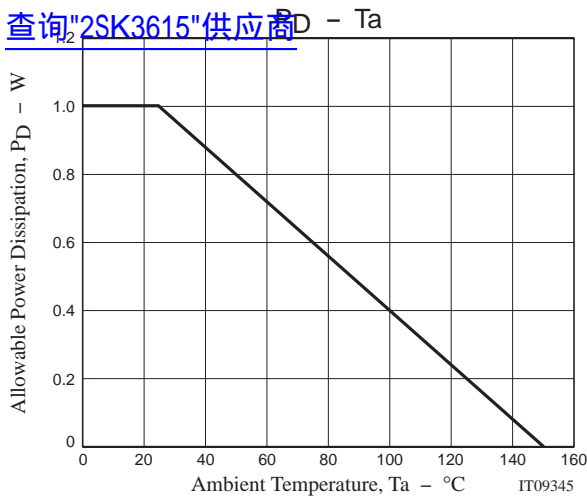
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Note on usage : Since the 2SK3615 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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