Ordering number : ENN8015

SANYO Semiconductors
DATA SHEET

N-Channel Silicon MOSFET

2SK3832 — General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.
- 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		30	A
Drain Current (Pulse)	I_{DP}	PW≤10µs, duty cycle≤1%	120	A
Allowable Power Dissipation	P_D		2.5	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}		56	mJ
Avalanche Current *2	I_{AV}		30	A

*1. V_{DD}=20V, L=100µH, I_{AV}=30A

*2. L≤100µH, 1 Pulse

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings min	Ratings typ	Ratings max	Unit
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=15A	12.5	21		S
Static Drain-to-Source On-State Resistance	R_{DS}(on)1	I_D=15A, V_{GS}=10V		46	60	mΩ
	R_{DS}(on)2	I_D=15A, V_{GS}=4V		57	80	mΩ
Input Capacitance	Ciss	V_{DS}=20V, f=1MHz		2150		pF
Output Capacitance	Coss	V_{DS}=20V, f=1MHz		160		pF
Reverse Transfer Capacitance	Crss	V_{DS}=20V, f=1MHz		110		pF

Marking : K3832

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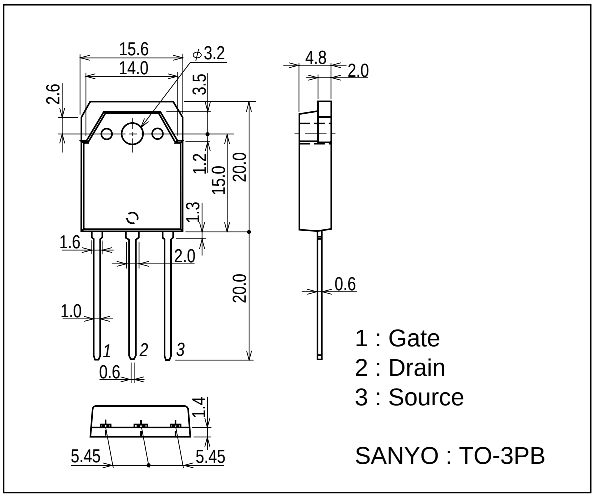
Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		20		ns
Rise Time	t_r	See specified Test Circuit.		36		ns
Turn-OFF Delay Time	t_d(off)	See specified Test Circuit.		180		ns
Fall Time	t_f	See specified Test Circuit.		60		ns
Total Gate Charge	Qg	V_{DS}=50V, V_{GS}=10V, I_D=30A		42		nC
Gate-to-Source Charge	Qgs	V_{DS}=50V, V_{GS}=10V, I_D=30A		7.2		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=50V, V_{GS}=10V, I_D=30A		9.2		nC
Diode Forward Voltage	V_{SD}	I_S=30A, V_{GS}=0		1.0	1.2	V

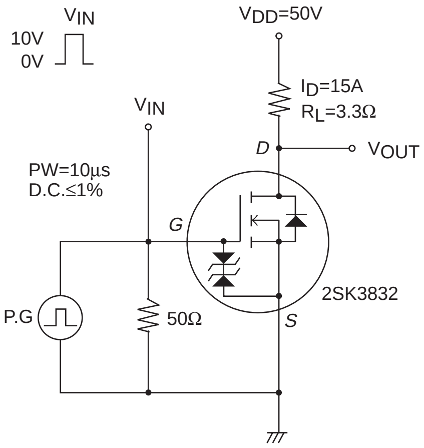
Package Dimensions

unit : mm

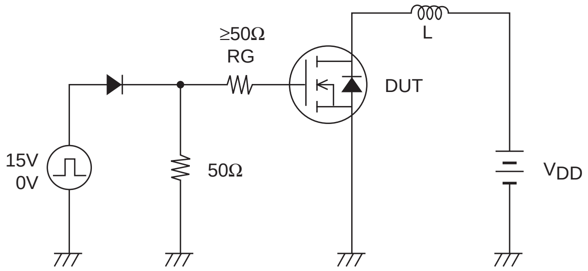
2056A

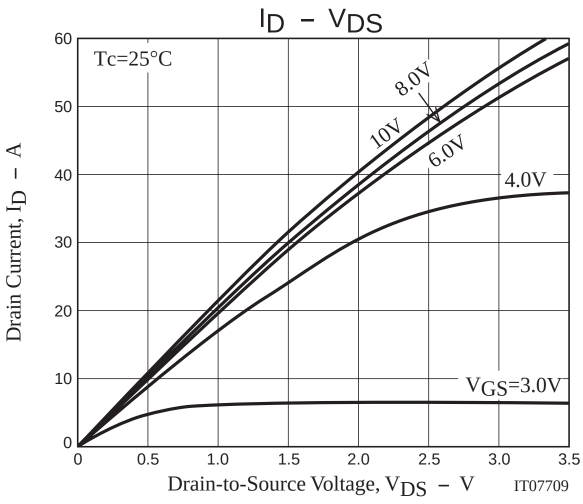


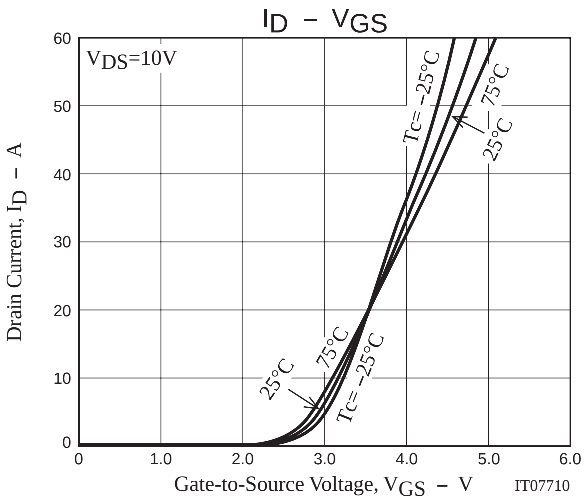
Switching Time Test Circuit



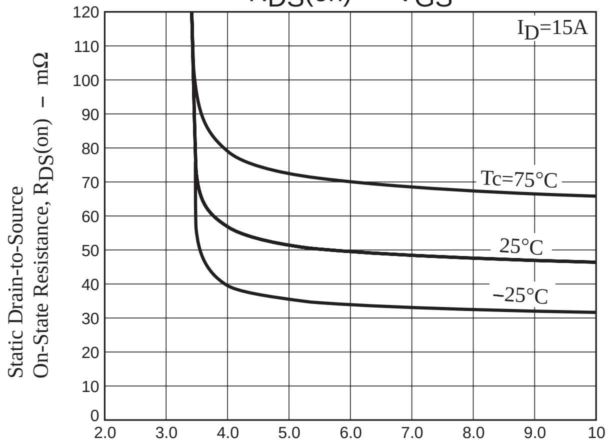
Unclamped Inductive Circuit



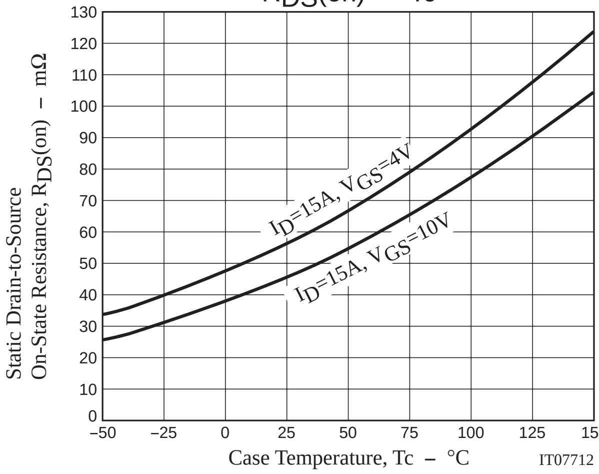




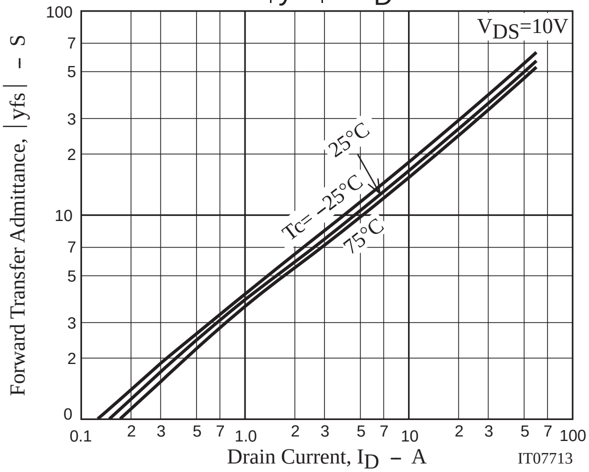
R_{DS}(on) – V_{GS}



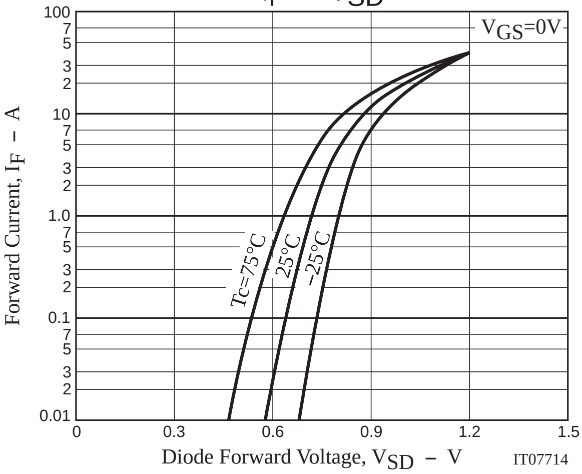
R_{DS}(on) – Tc



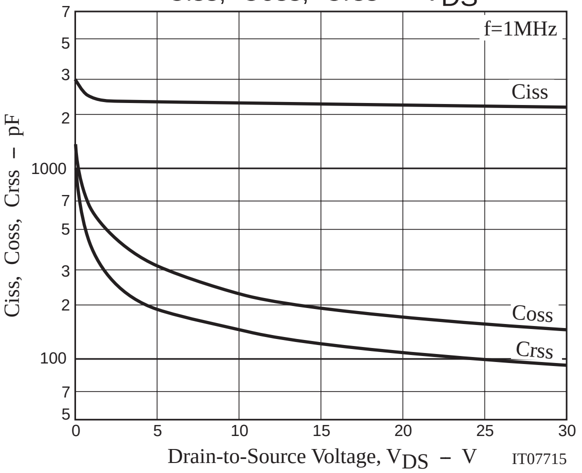
|yfs| – I_D



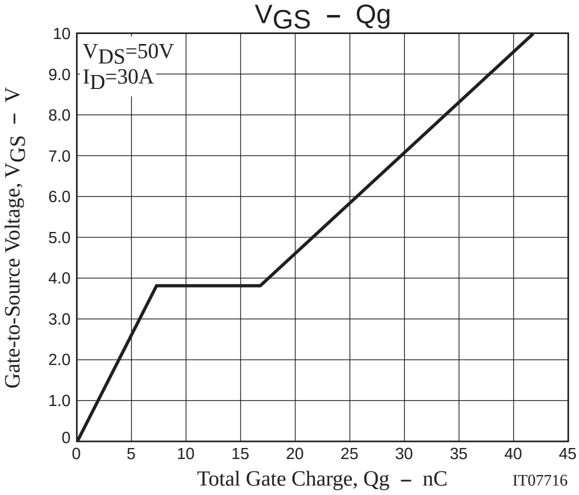
I_F – V_{SD}



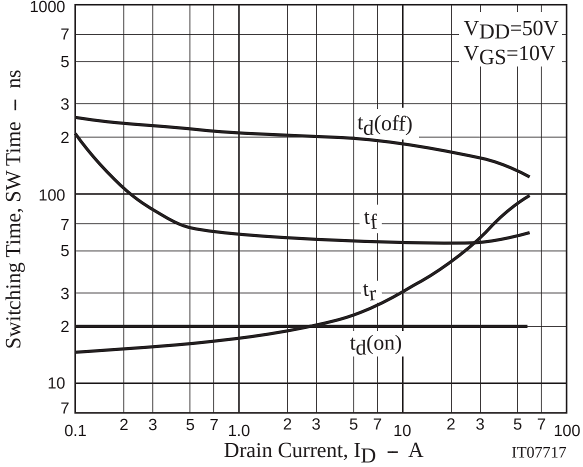
Ciss, Coss, Crss – V_{DS}



V_{GS} – Qg



SW Time – I_D



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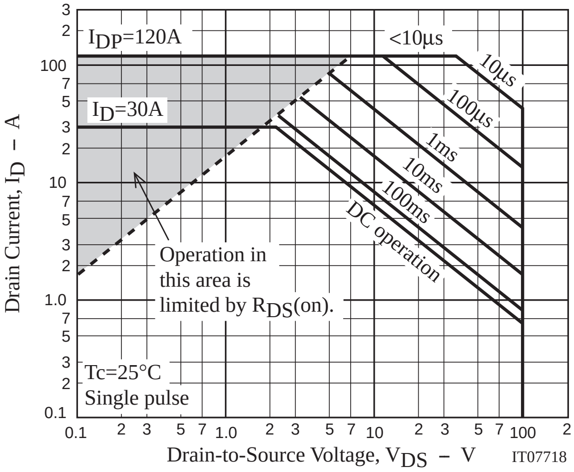

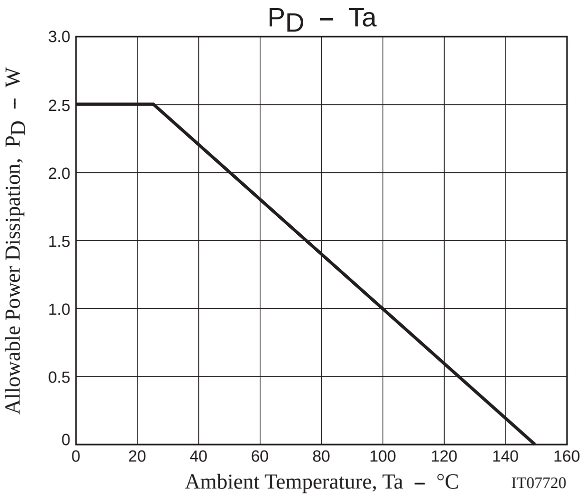

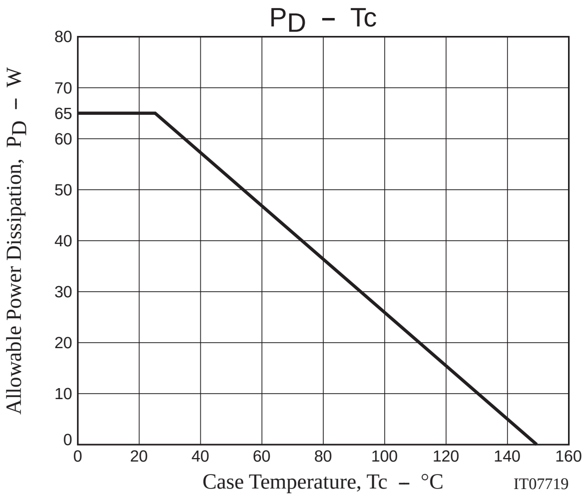

Note on usage : Since the 2SK3832 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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