

SANYO Semiconductors DATA SHEET

2SK3850 — General-Purpose Switching Device Applications

Features

- · Best suited for motor drive.
- · Low ON-resistance.
- · Low Qg.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	VDSS		600	V
Gate-to-Source Voltage	VGSS		±30	V
Drain Current (DC)	ID		0.7	Α
Drain Current (Pulse)	IDP	PW≤10μs, duty cycle≤1%	2.8	Α
Allowable Power Dissipation	Do		1.0	W
	PD	Tc=25°C	15	W
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Uill
Drain-to-Source Breakdown Voltage	V(BR)DSS	ID=1mA, VGS=0	600			V
Zero-Gate Voltage Drain Current	IDSS	V _{DS} =600V, V _{GS} =0			100	μΑ
Gate-to-Source Leakage Current	IGSS	VGS=±30V, VDS=0			±100	nA
Cutoff Voltage	VGS(off)	V _{DS} =10V, I _D =1mA	2.5		3.5	V
Forward Transfer Admittance	yfs	V _{DS} =10V, I _D =0.35A	280	560		mS
Static Drain-to-Source On-State Resistance	RDS(on)	VGS=10V, ID=0.35A		14	18.5	Ω
Input Capacitance	Ciss	V _{DS} =20V, f=1MHz		96		pF
Output Capacitance	Coss	V _{DS} =20V, f=1MHz		29		pF
Reverse Transfer Capacitance	Crss	VDS=20V, f=1MHz		16		pF

Marking: K3850 Continued on next page.

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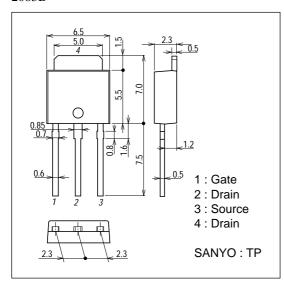
2SK3850

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	O III
Turn-ON Delay Time	td(on)	See specified Test Circuit.		9		ns
Rise Time	t _r	See specified Test Circuit.		11		ns
Turn-OFF Delay Time	td(off)	See specified Test Circuit.		16		ns
Fall Time	tf	See specified Test Circuit.		50		ns
Total Gate Charge	Qg	V _{DS} =200V, V _{GS} =10V, I _D =0.7A		4		nC
Diode Forward Voltage	VSD	IS=0.7A, VGS=0		0.89	1.2	V

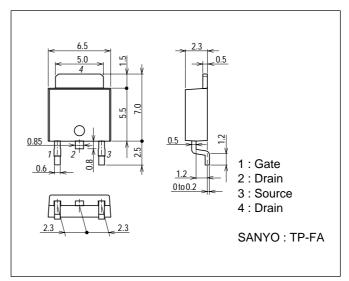
Package Dimensions

unit : mm 2083B

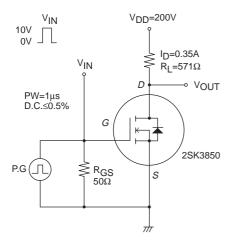


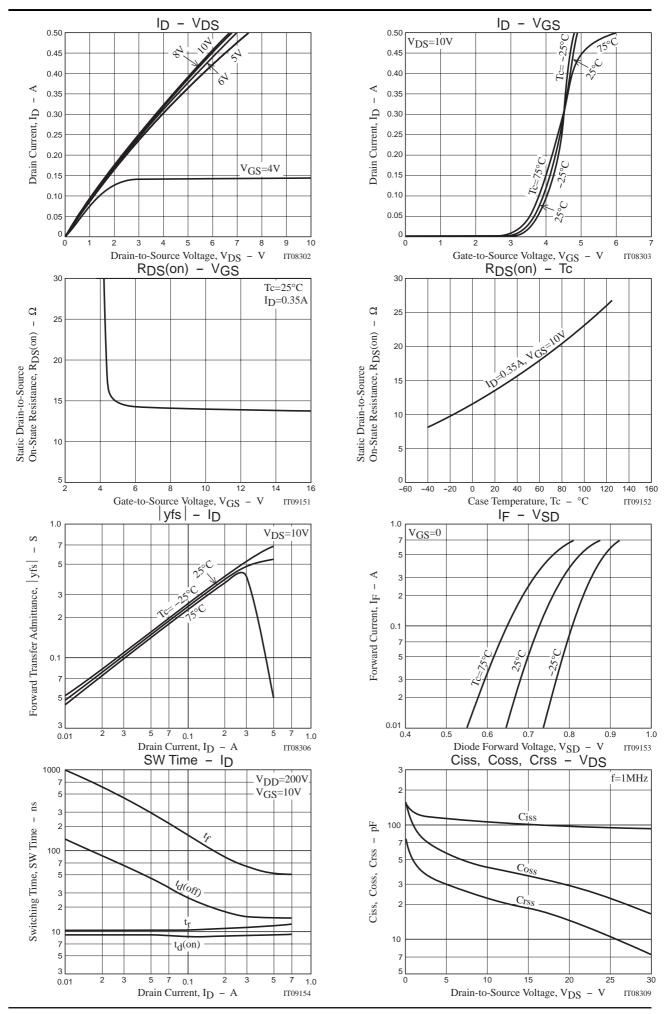
Package Dimensions

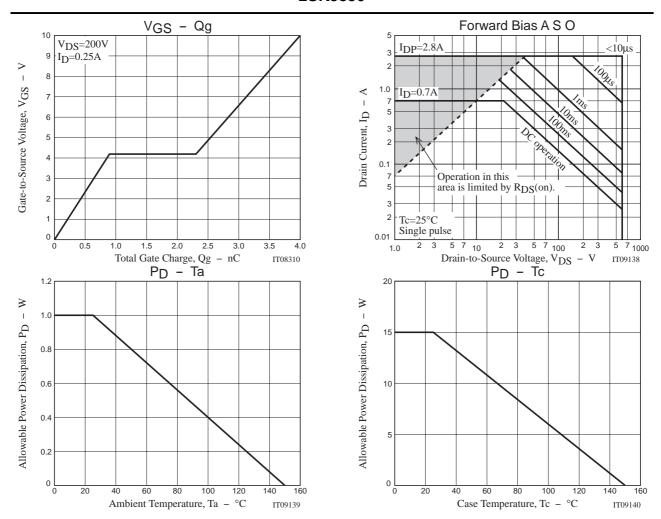
unit : mm 2092B



Switching Time Test Circuit







Note on usage: Since the 2SK3850 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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