



2SK3850 — N-Channel Silicon MOSFET

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	V _{DSS}		600	V
Gate-to-Source Voltage	V _{GSS}		±30	V
Drain Current (DC)	I _D		0.7	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	2.8	A
Allowable Power Dissipation	P _D		1.0	W
		Tc=25°C	15	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	600			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =600V, V _{GS} =0			100	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±30V, V _{DS} =0			±100	nA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =1mA	2.5		3.5	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =0.35A	280	560		mS
Static Drain-to-Source On-State Resistance	R _{DS(on)}	V _{GS} =10V, I _D =0.35A		14	18.5	Ω
Input Capacitance	C _{iss}	V _{DS} =20V, f=1MHz		96		pF
Output Capacitance	C _{oss}	V _{DS} =20V, f=1MHz		29		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =20V, f=1MHz		16		pF

Marking :K3850

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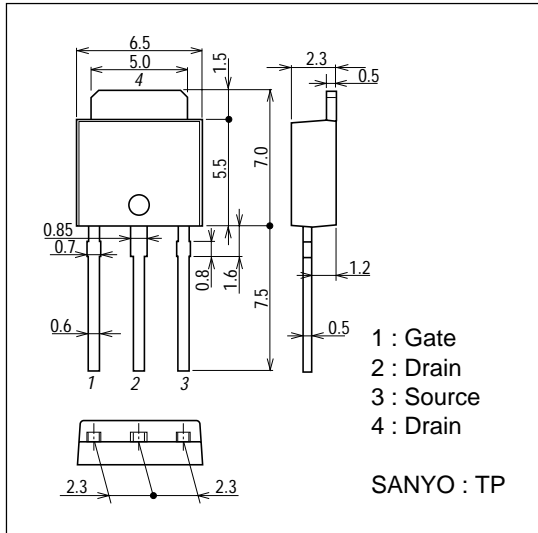
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_d(\text{on})$	See specified Test Circuit.		9		ns
Rise Time	t_r	See specified Test Circuit.		11		ns
Turn-OFF Delay Time	$t_d(\text{off})$	See specified Test Circuit.		16		ns
Fall Time	t_f	See specified Test Circuit.		50		ns
Total Gate Charge	Q_g	$V_{DS}=200V, V_{GS}=10V, I_D=0.7A$		4		nC
Diode Forward Voltage	V_{SD}	$I_S=0.7A, V_{GS}=0$		0.89	1.2	V

Package Dimensions

unit : mm

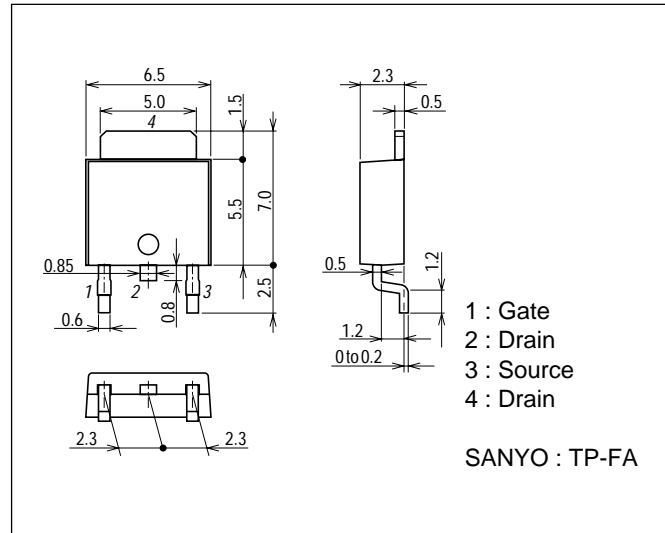
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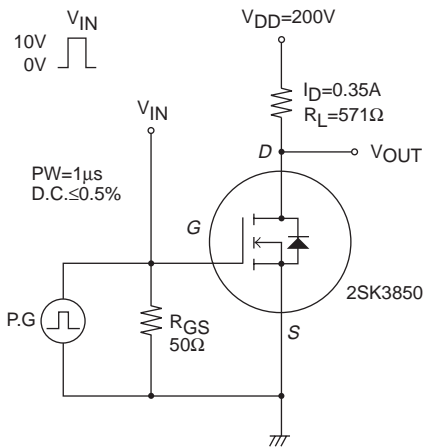
Package Dimensions

unit : mm

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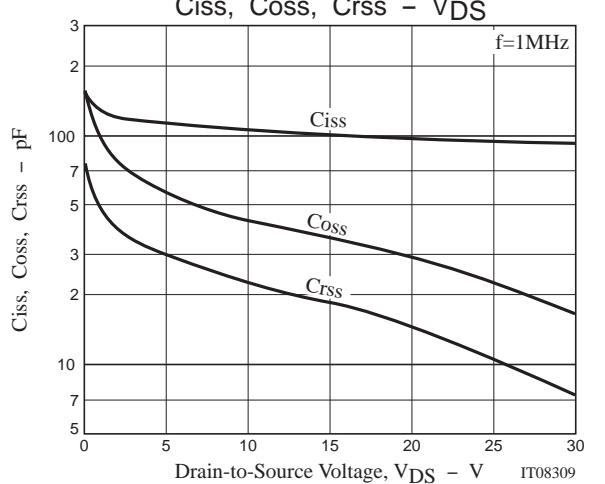
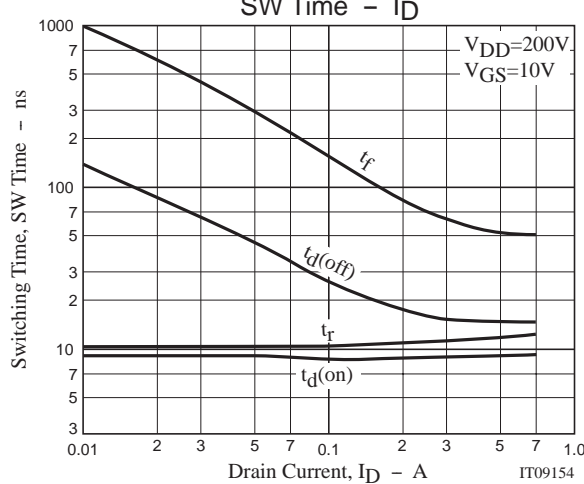
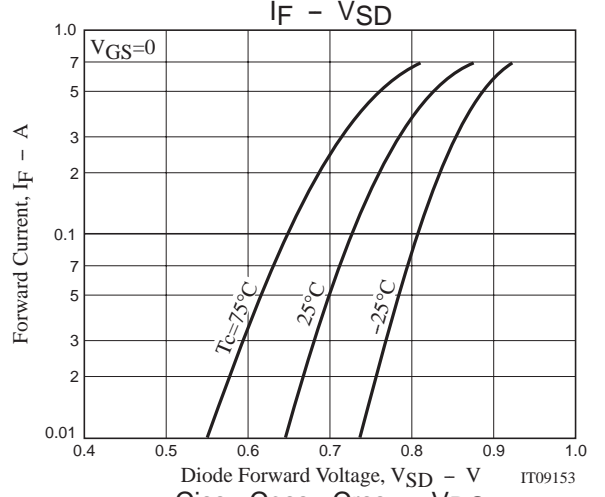
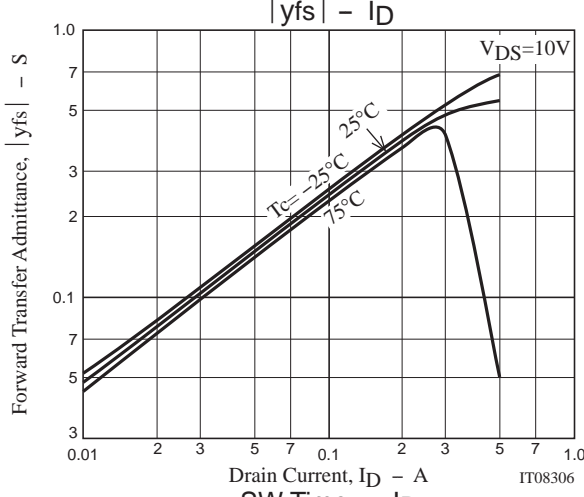
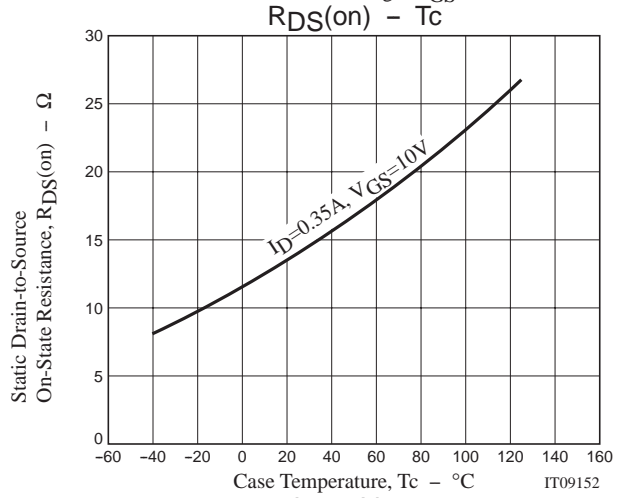
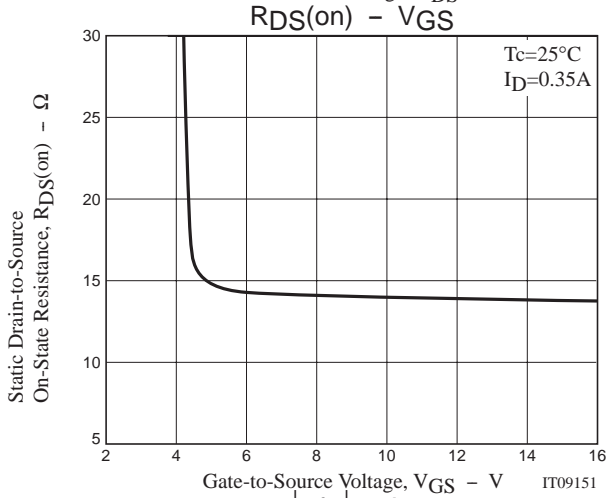
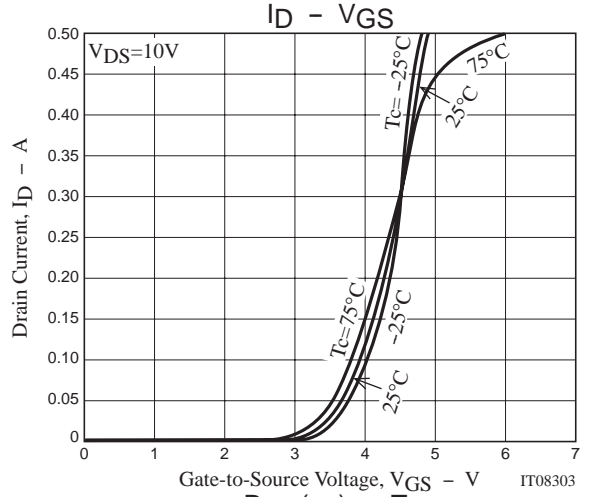
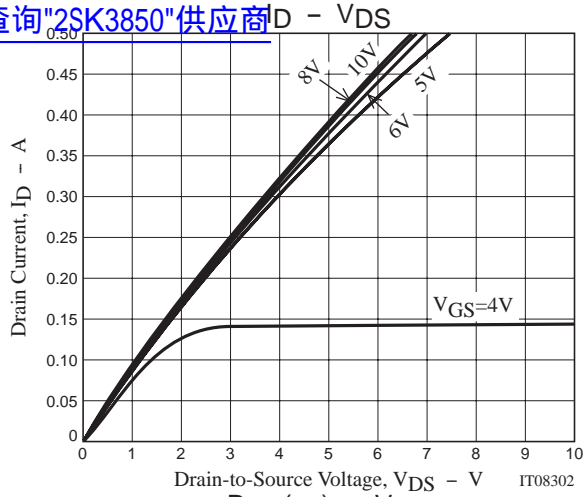


Switching Time Test Circuit

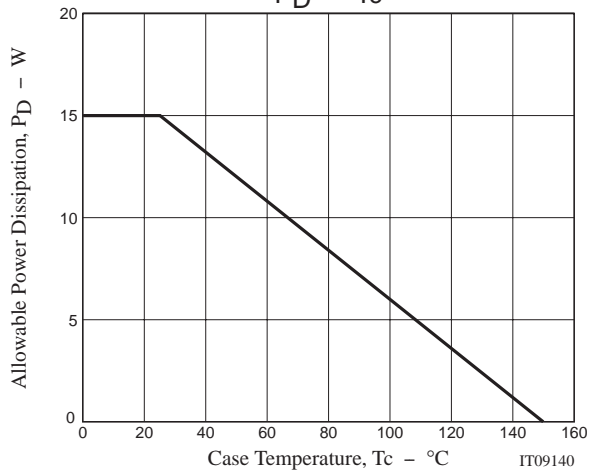
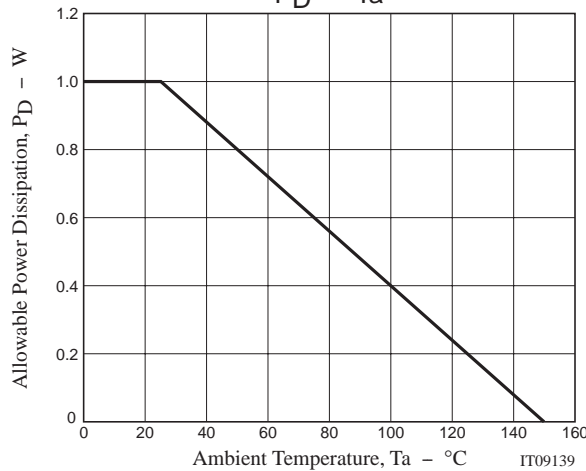
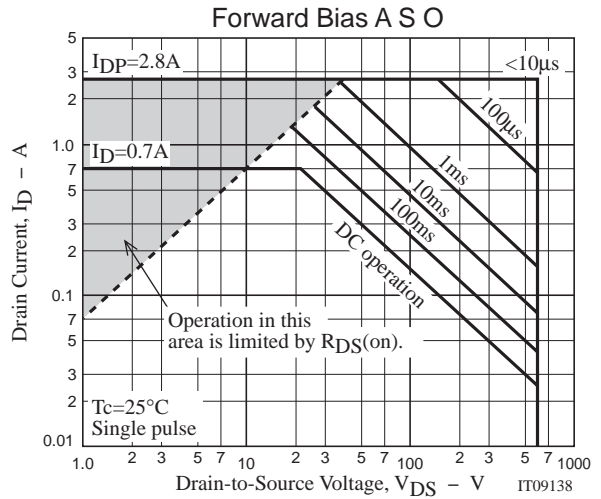
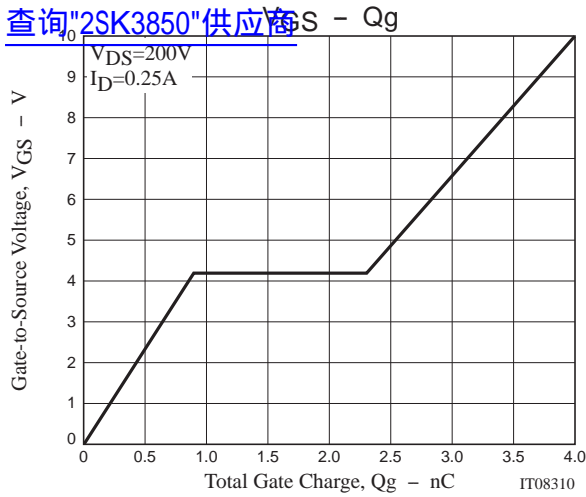


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Note on usage : Since the 2SK3850 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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