



2SK4137 — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Low ON-resistance, low input capacitance, ultrahigh-speed switching.
- Adoption of high reliability HVP process.
- Avalanche resistance guarantee.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		500	V
Gate-to-Source Voltage	V _{GSS}		±30	V
Drain Current (DC)	I _D		9.5	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	38	A
Allowable Power Dissipation	P _D	Tc=25°C (SANYO's ideal heat dissipation condition*1)	80	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C
Avalanche Energy (Single pulse) *2	E _{AS}		56	mJ
Avalanche Current *3	I _{AV}		9.5	A

*1 SANYO's condition is radiation from backside.

The method is applying silicone grease to the backside of the device and attaching the device to water-cooled radiator made of aluminium.

*2 V_{DD}=99V, L=1mH, I_{AV}=9.5A

*3 L≤1mH, single pulse

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	I _D =10mA, V _{GS} =0V	500			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =400V, V _{GS} =0V			100	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±30V, V _{DS} =0V			±100	nA

Marking: K4137

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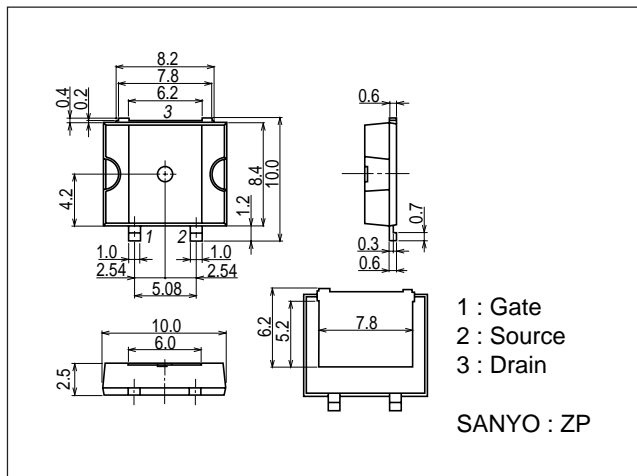
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Cutoff Voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1mA$	3		5	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10V, I_D=5A$	3	6		S
Static Drain-to-Source On-State Resistance	$R_{DS(on)}$	$I_D=5A, V_{GS}=10V$		0.5	0.65	Ω
Input Capacitance	C_{iss}	$V_{DS}=30V, f=1MHz$		750		pF
Output Capacitance	C_{oss}	$V_{DS}=30V, f=1MHz$		150		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=30V, f=1MHz$		35		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		16		ns
Rise Time	t_r	See specified Test Circuit.		44		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		102		ns
Fall Time	t_f	See specified Test Circuit.		47		ns
Total Gate Charge	Q_g	$V_{DS}=200V, V_{GS}=10V, I_D=10.5A$		30		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=200V, V_{GS}=10V, I_D=10.5A$		5.2		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=200V, V_{GS}=10V, I_D=10.5A$		17		nC
Diode Forward Voltage	V_{SD}	$I_S=10.5A, V_{GS}=0V$		0.9	1.2	V

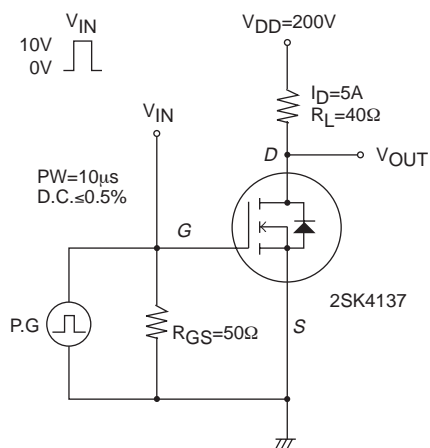
Package Dimensions

unit : mm (typ)

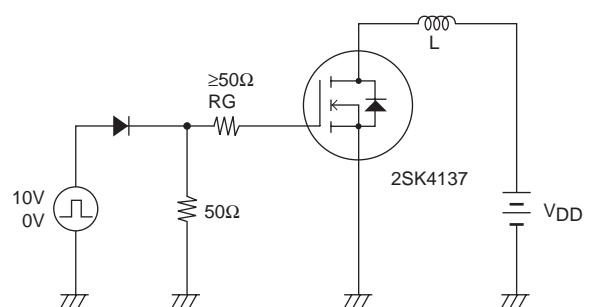
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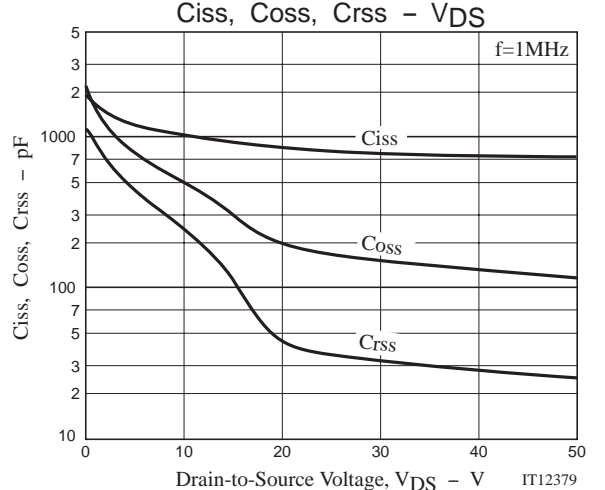
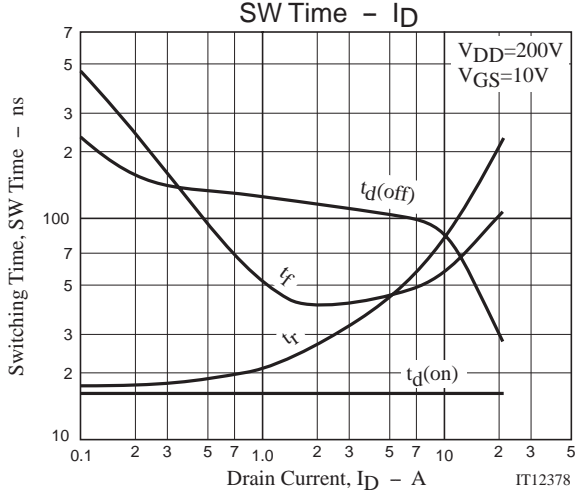
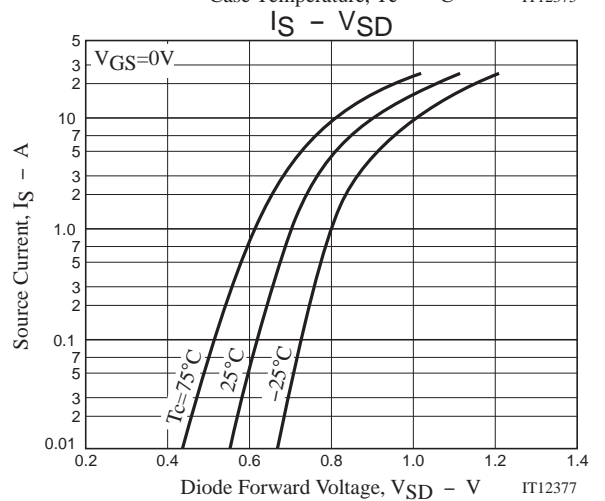
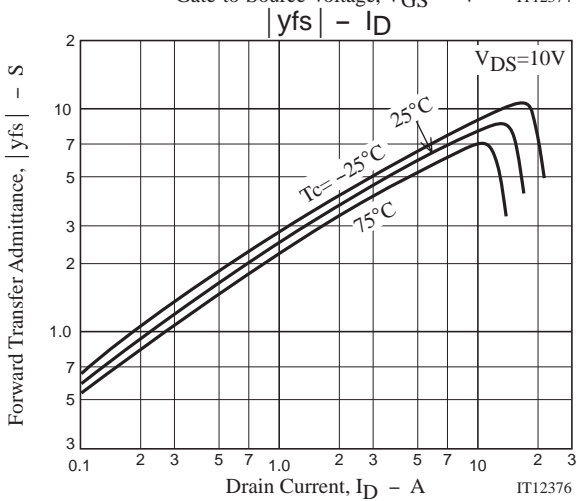
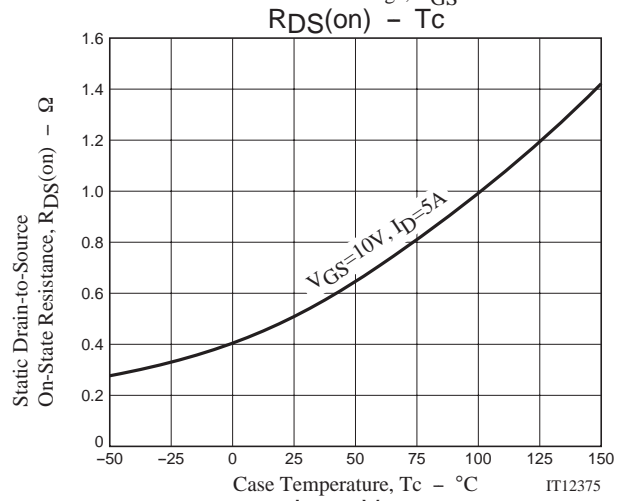
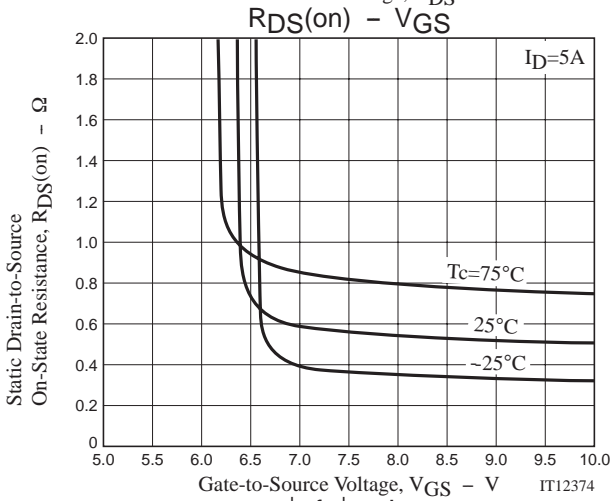
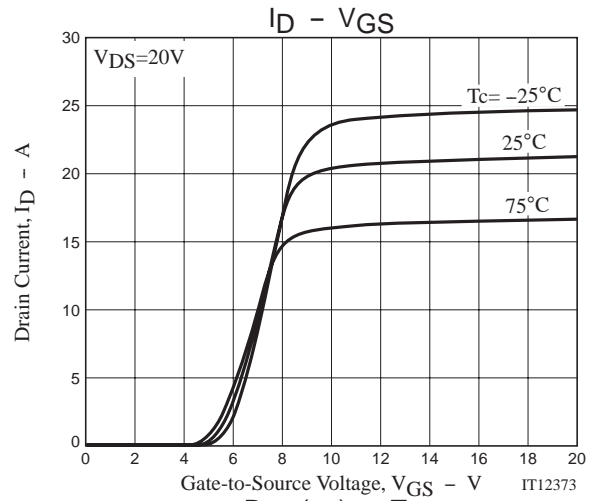
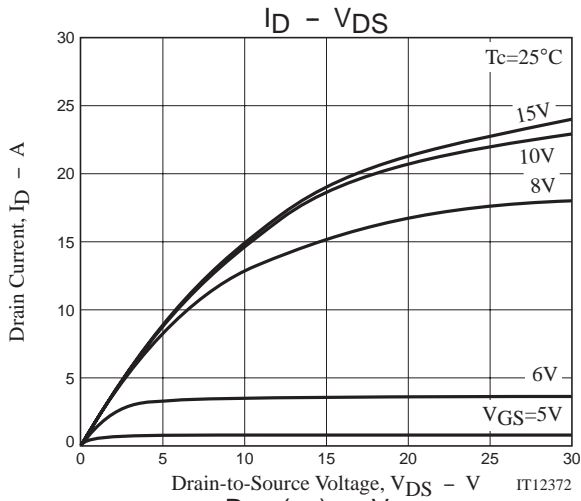
Switching Time Test Circuit

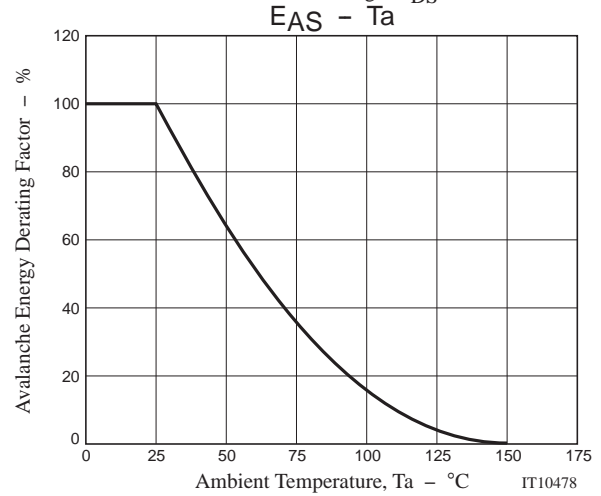
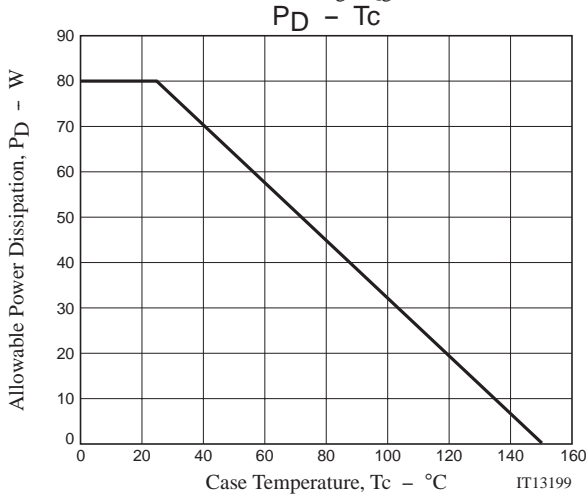
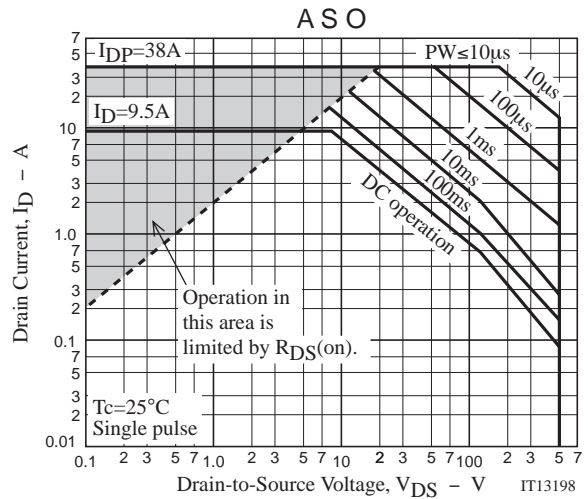
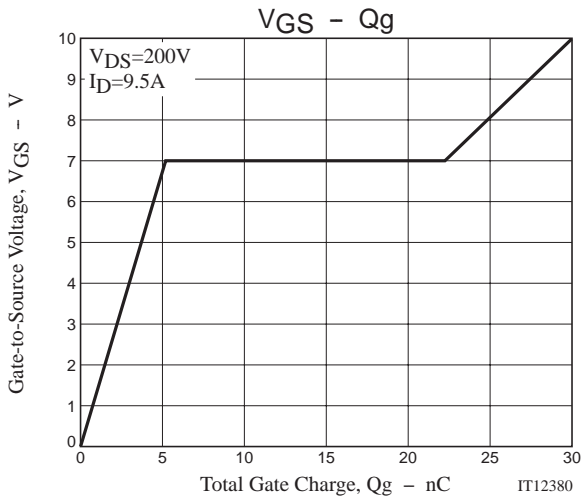


Avalanche Resistance Test Circuit



2SK4137





Note on usage : Since the 2SK4137 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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