Ordering number : ENA0565

SANYO Semiconductors

DATA SHEET

N-Channel Silicon MOSFET

2SK4067 — General-Purpose Switching Device Applications

Features

- Motor drive applications.
- 4.5V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		30	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		8	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	32	A
Allowable Power Dissipation	P_D		1	W
		Tc=25°C	10	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	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=1mA, V_{GS}=0V	30			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V, V_{GS}=0V			1	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V			±10	μA
Cutoff Voltage	$V_{GS}(off)$	V_{DS}=10V, I_D=1mA	1.5		2.5	V
Forward Transfer Admittance	$\|yfs\|$	V_{DS}=10V, I_D=4A	2.6	4.4		S
Static Drain-to-Source On-State Resistance	$R_{DS}(on)1$	I_D=8A, V_{GS}=10V		85	115	mΩ
	$R_{DS}(on)2$	I_D=4A, V_{GS}=4.5V		155	220	mΩ
Input Capacitance	Ciss	V_{DS}=10V, f=1MHz		260		pF
Output Capacitance	Coss	V_{DS}=10V, f=1MHz		65		pF
Reverse Transfer Capacitance	Crss	V_{DS}=10V, f=1MHz		40		pF

Marking : K4067

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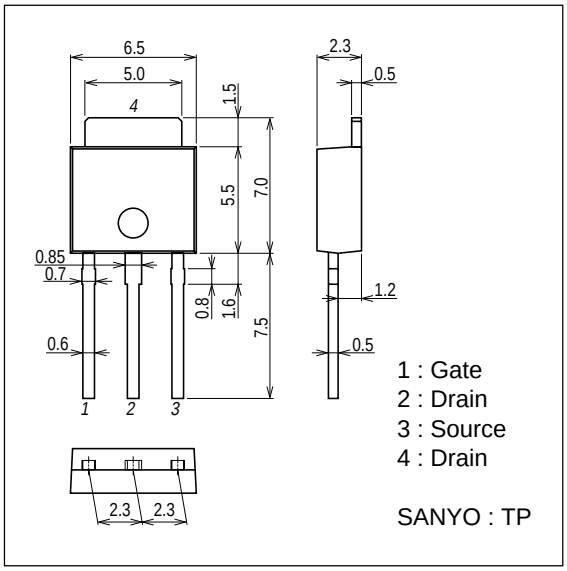
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	t_{d}(on)	See specified Test Circuit.		9		ns
Rise Time	t_{r}	See specified Test Circuit.		8		ns
Turn-OFF Delay Time	t_{d}(off)	See specified Test Circuit.		19		ns
Fall Time	t_{f}	See specified Test Circuit.		8		ns
Total Gate Charge	Qg	V_{DS}=10V, V_{GS}=10V, I_{D}=8A		6		nC
Gate-to-Source Charge	Qgs	V_{DS}=10V, V_{GS}=10V, I_{D}=8A		1.2		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=10V, V_{GS}=10V, I_{D}=8A		1.0		nC
Diode Forward Voltage	V_{SD}	I_{S}=8A, V_{GS}=0V		1.05	1.2	V

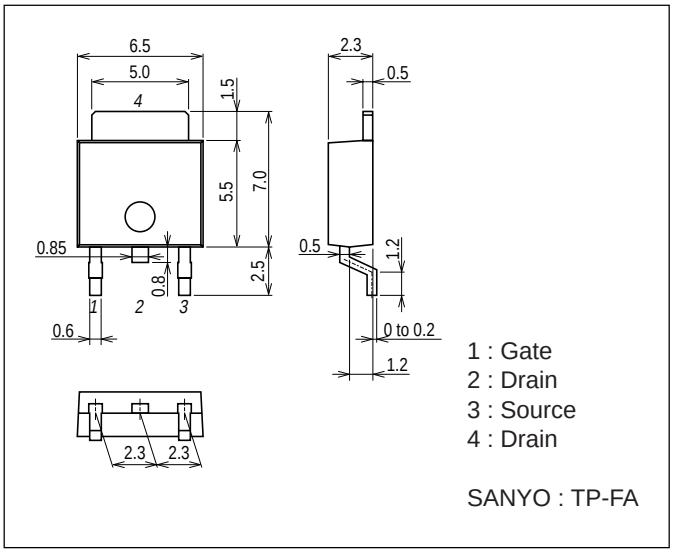
Package Dimensions

unit : mm (typ)
7518-004

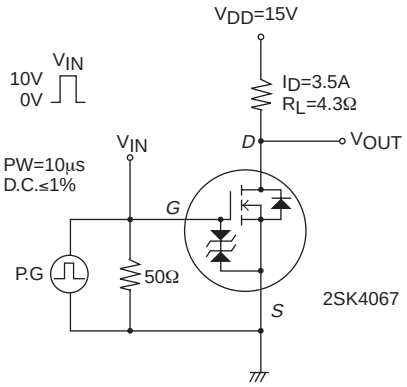


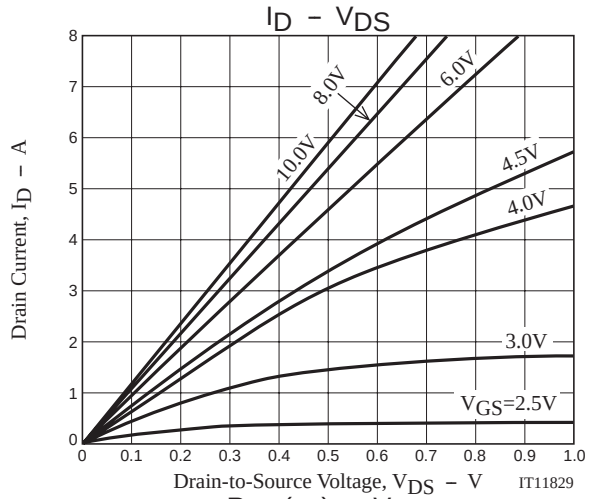
Package Dimensions

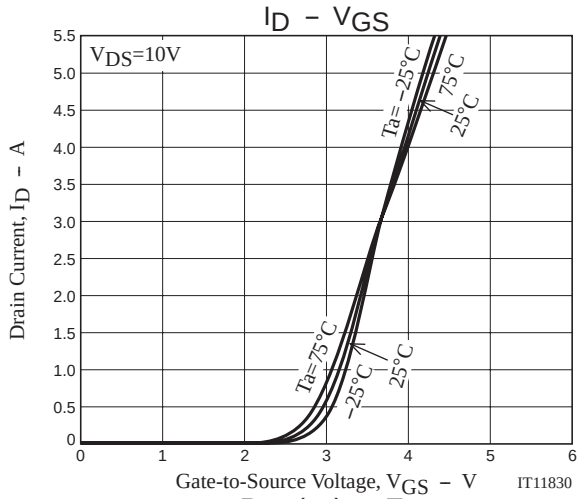
unit : mm (typ)
7003-004

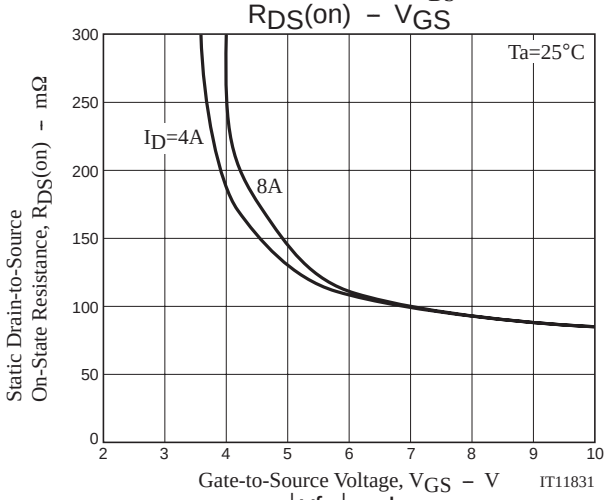


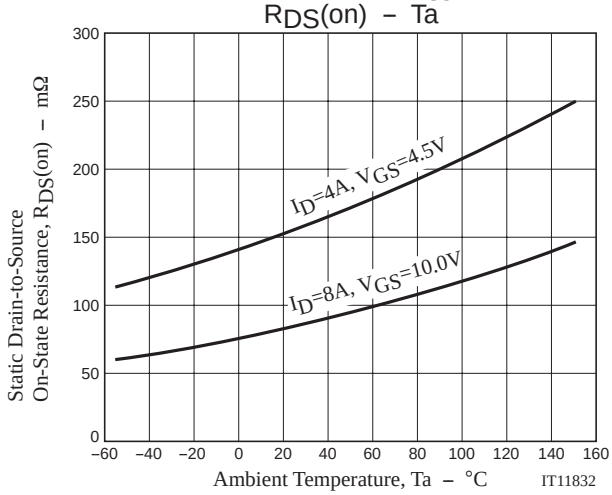
Switching Time Test Circuit

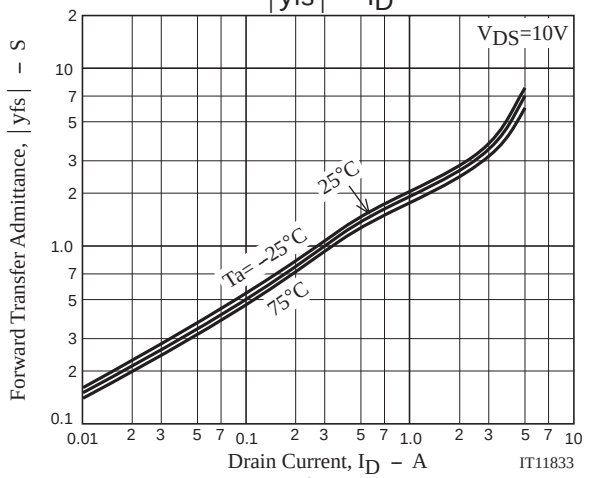


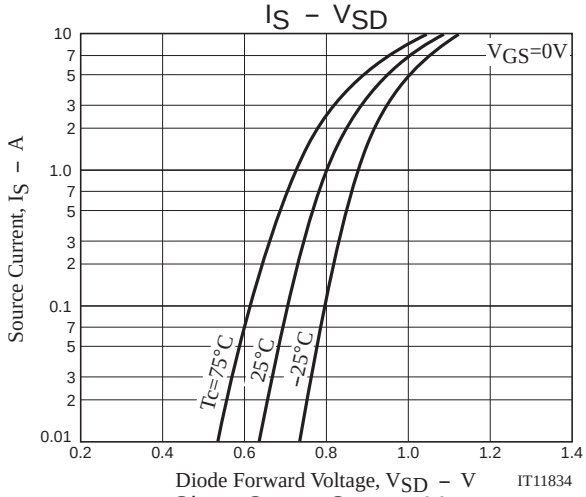

ID – VDS
Drain Current, ID – A
Drain-to-Source Voltage, VDS – V
IT11829
8.0V
10.0V
6.0V
4.5V
4.0V
3.0V
VGS=2.5V

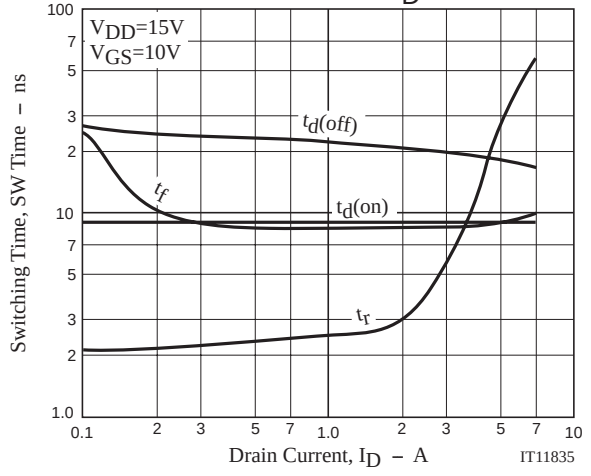

ID – VGS
VDS=10V
Drain Current, ID – A
Gate-to-Source Voltage, VGS – V
IT11830
Ta=–25°C
75°C
25°C
Ta=75°C
–25°C
25°C

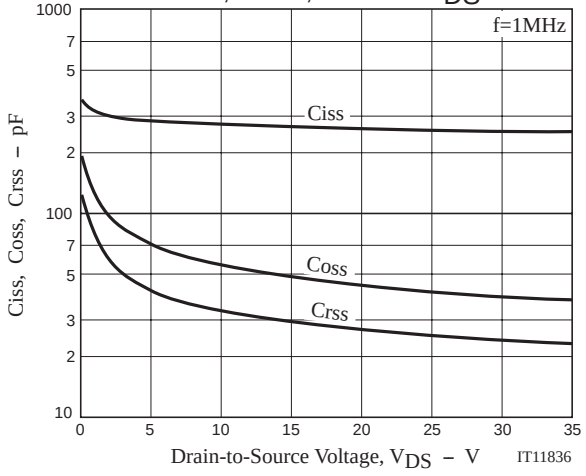

RDS(on) – VGS
Ta=25°C
ID=4A
8A
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Gate-to-Source Voltage, VGS – V
IT11831

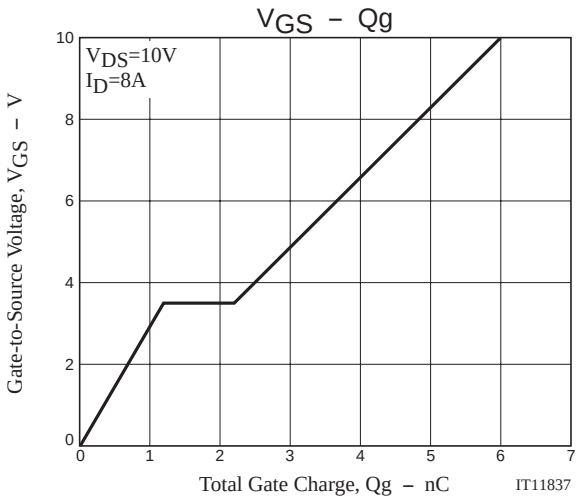

RDS(on) – Ta
ID=4A, VGS=4.5V
ID=8A, VGS=10.0V
Static Drain-to-Source On-State Resistance, RDS(on) – mΩ
Ambient Temperature, Ta – °C
IT11832

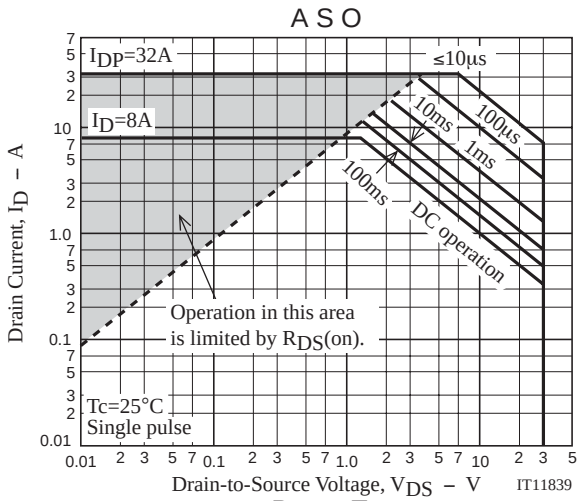

|yfs| – ID
VDS=10V
Forward Transfer Admittance, |yfs| – S
Drain Current, ID – A
IT11833
25°C
Ta=–25°C
75°C

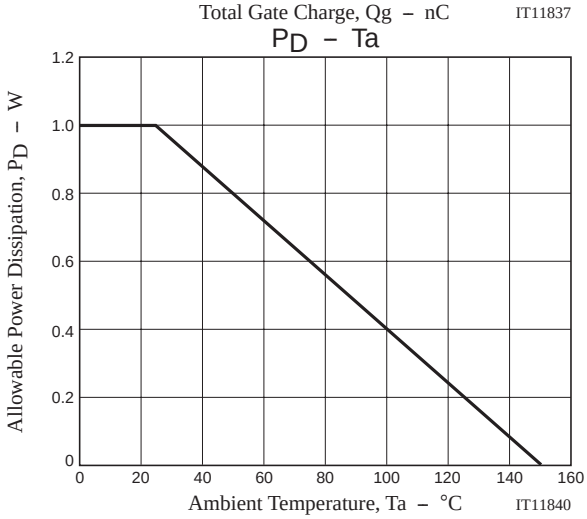

IS – VSD
VGS=0V
Source Current, IS – A
Diode Forward Voltage, VSD – V
IT11834
Tc=75°C
25°C
–25°C

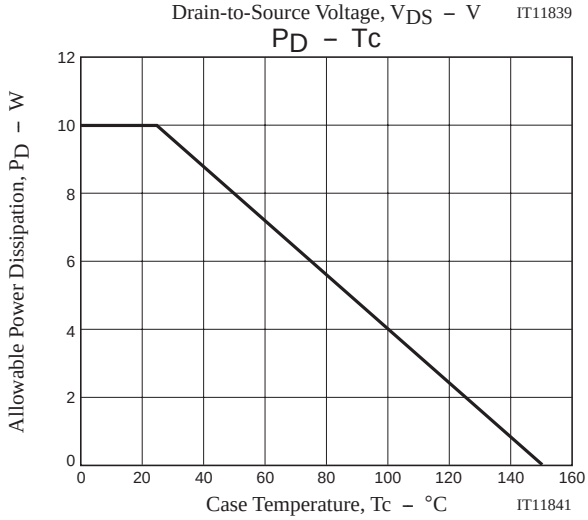

SW Time – ID
VDD=15V
VGS=10V
td(off)
tf
td(on)
tr
Switching Time, SW Time – ns
Drain Current, ID – A
IT11835


Ciss, Coss, Crss – VDS
f=1MHz
Ciss
Coss
Crss
Ciss, Coss, Crss – pF
Drain-to-Source Voltage, VDS – V
IT11836









Note on usage : Since the 2SK4067 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.