Ordering number : ENA0519

SANYO Semiconductors
DATA SHEET

2SJ538 — P-Channel Silicon MOSFET
Load Switching Applications

Features

- Low ON-resistance.
- 4V 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		−15	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−45	A
Allowable Power Dissipation	P_D		1.0	W
		Tc=25°C	30	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			−100	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	−1.0		−2.5	V
Forward Transfer Admittance	$\|yfs\|$	V_{DS}=-10V, I_D=-8A	10	15		S
Static Drain-to-Source On-State Resistance	$R_{DS}(on)1$	I_D=-8A, V_{GS}=-10V		24	30	mΩ
	$R_{DS}(on)2$	I_D=-4A, V_{GS}=-4V		40	52	mΩ
Input Capacitance	Ciss	V_{DS}=-10V, f=1MHz		2000		pF
Output Capacitance	Coss	V_{DS}=-10V, f=1MHz		1000		pF
Reverse Transfer Capacitance	Crss	V_{DS}=-10V, f=1MHz		470		pF

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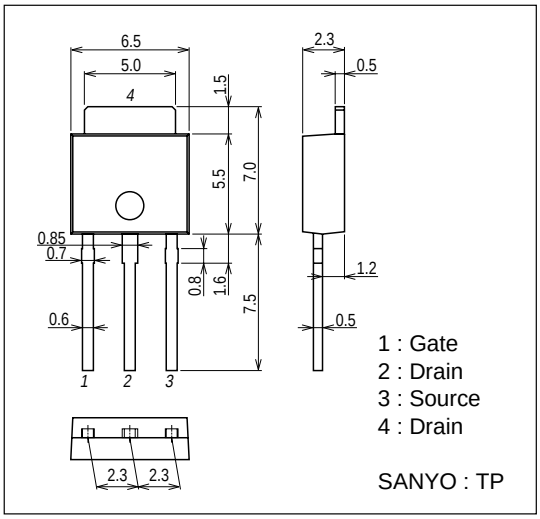
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	t_d(on)	See specified Test Circuit.		20		ns
Rise Time	t_r	See specified Test Circuit.		70		ns
Turn-OFF Delay Time	t_d(off)	See specified Test Circuit.		210		ns
Fall Time	t_f	See specified Test Circuit.		140		ns
Total Gate Charge	Qg	V_{DS}=−10V, V_{GS}=−10V, I_D=−8A		58		nC
Gate-to-Source Charge	Qgs	V_{DS}=−10V, V_{GS}=−10V, I_D=−8A		7		nC
Gate-to-Drain “Miller” Charge	Qgd	V_{DS}=−10V, V_{GS}=−10V, I_D=−8A		17		nC
Diode Forward Voltage	V_{SD}	I_S=−8A, V_{GS}=0V		−1.0	−1.5	V

Package Dimensions

unit : mm (typ)

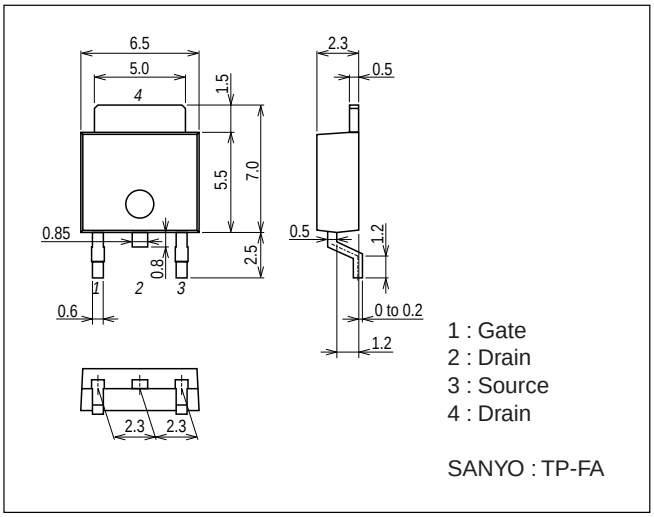
7518-004



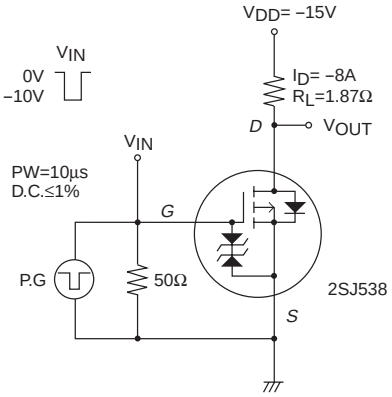
Package Dimensions

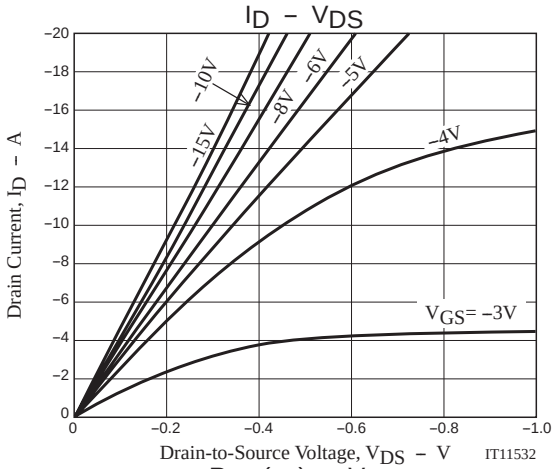
unit : mm (typ)

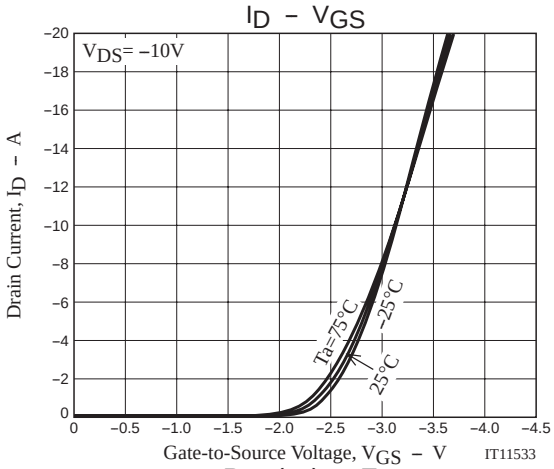
7003-004

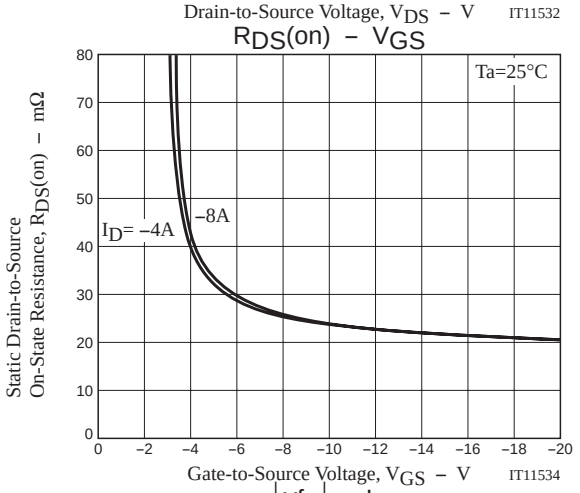


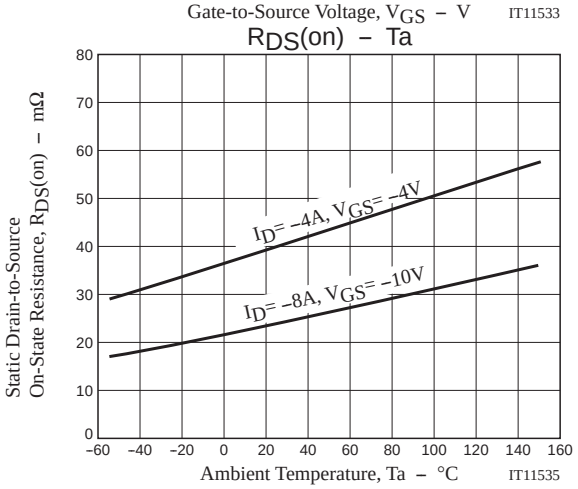
Switching Time Test Circuit

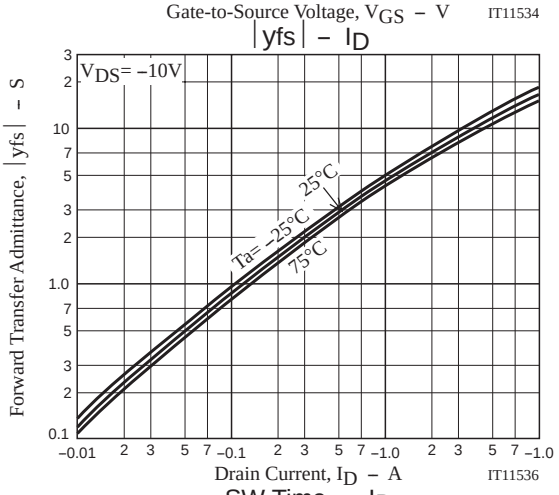


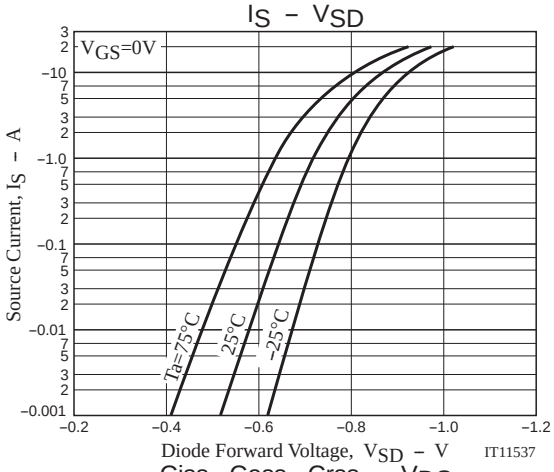


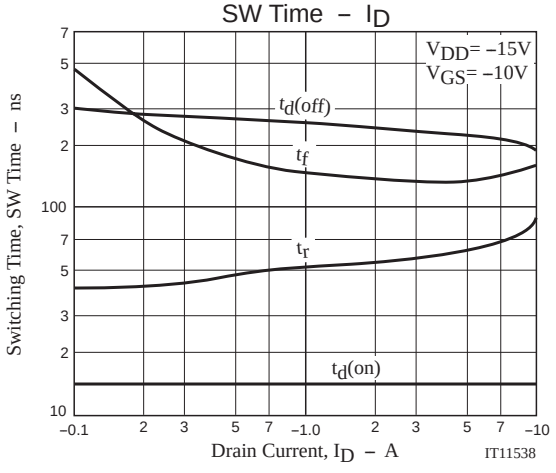


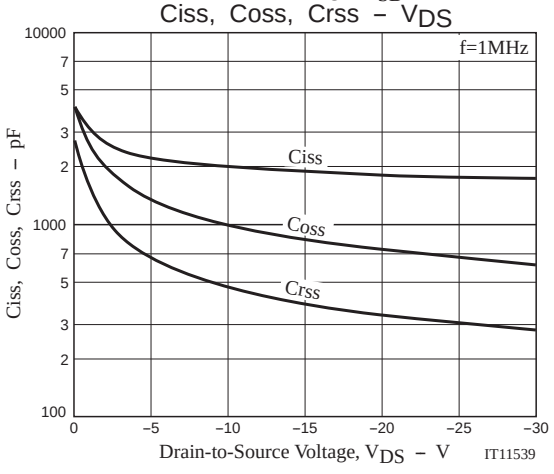


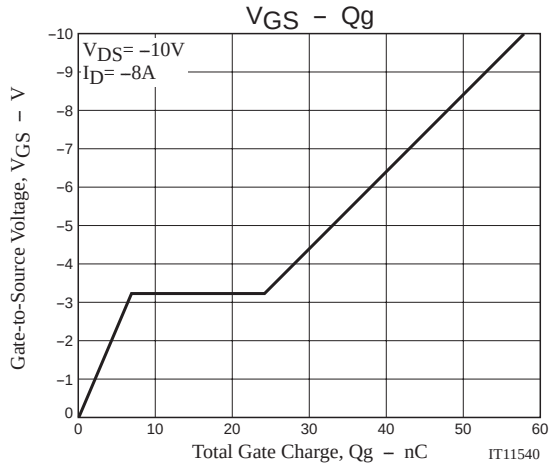


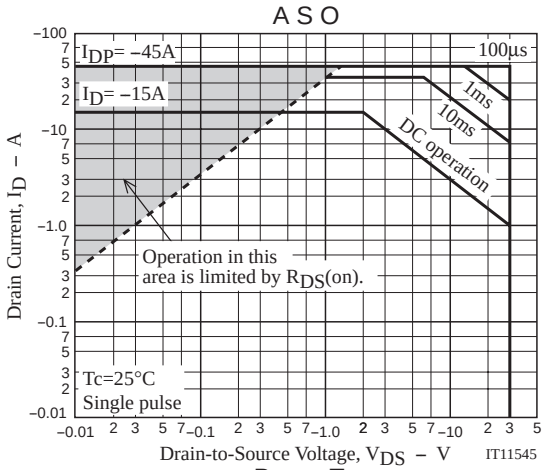


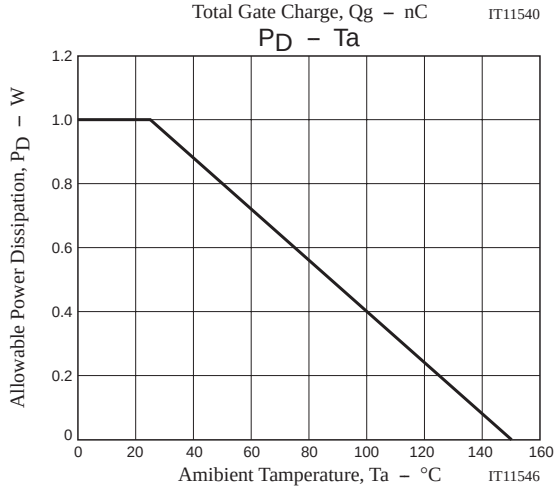


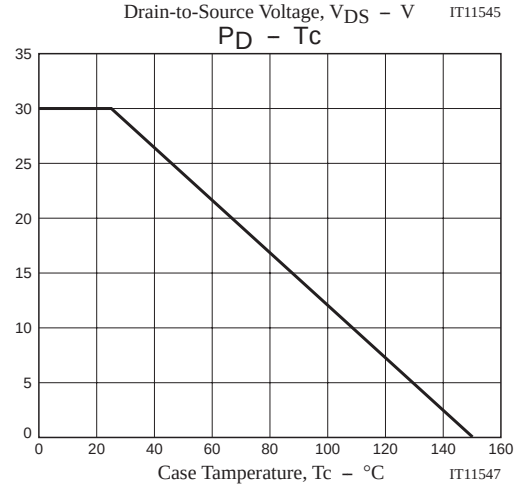












Note on usage : Since the 2SJ538 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.