Ordering number : ENA0489

SANYO Semiconductors
DATA SHEET

P-Channel Silicon MOSFET

2SJ630 — General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 1.8V drive.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		−12	V
Gate-to-Source Voltage	V_{GSS}		±8	V
Drain Current (DC)	I_D		−6	A
Drain Current (Pulse)	I_{DP}	PW≤10μs, duty cycle≤1%	−24	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (600mm²×0.8mm)	1.5	W
		Tc=25°C	3.5	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	−12			V
Zero-Gate Voltage Drain Current	I_{DSS}	V_{DS}=-12V, V_{GS}=0V			−10	μA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±6.4V, V_{DS}=0V			±10	μA
Cutoff Voltage	$V_{GS}(off)$	V_{DS}=-6V, I_D=-1mA	−0.3		−1.0	V
Forward Transfer Admittance	$\|yfs\|$	V_{DS}=-6V, I_D=-3A	5.7	9.5		S
Static Drain-to-Source On-State Resistance	$R_{DS}(on)1$	I_D=-3A, V_{GS}=-4.5V		45	58	mΩ
	$R_{DS}(on)2$	I_D=-1.5A, V_{GS}=-2.5V		57	80	mΩ
	$R_{DS}(on)3$	I_D=-0.3A, V_{GS}=-1.8V		78	112	mΩ
Input Capacitance	Ciss	V_{DS}=-6V, f=1MHz		940		pF
Output Capacitance	Coss	V_{DS}=-6V, f=1MHz		230		pF
Reverse Transfer Capacitance	Crss	V_{DS}=-6V, f=1MHz		180		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		12		ns
Rise Time	t_r	See specified Test Circuit.		143		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		71		ns
Fall Time	t_f	See specified Test Circuit.		89		ns

Marking : MD

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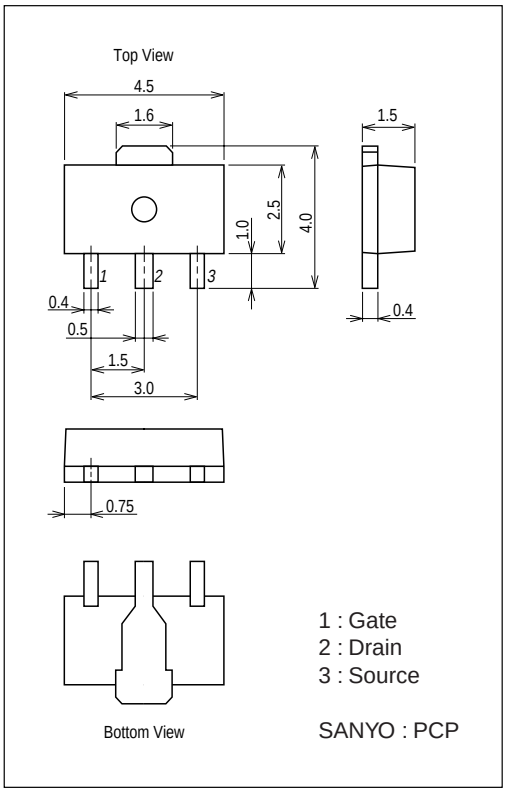
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	V_{DS}=-6V, V_{GS}=-4.5V, I_D=-6A		11		nC
Gate-to-Source Charge	Qgs	V_{DS}=-6V, V_{GS}=-4.5V, I_D=-6A		1.6		nC
Gate-to-Drain "Miller" Charge	Qgd	V_{DS}=-6V, V_{GS}=-4.5V, I_D=-6A		2.8		nC
Diode Forward Voltage	V_{SD}	I_S=-6A, V_{GS}=0V		-0.95	-1.5	V

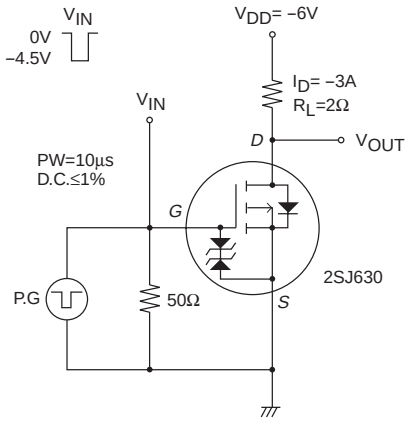
Package Dimensions

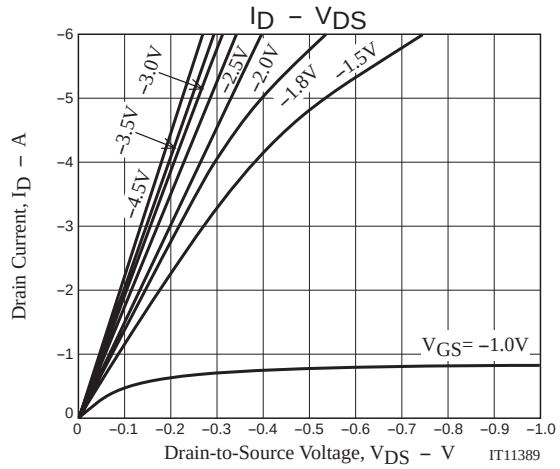
unit : mm (typ)

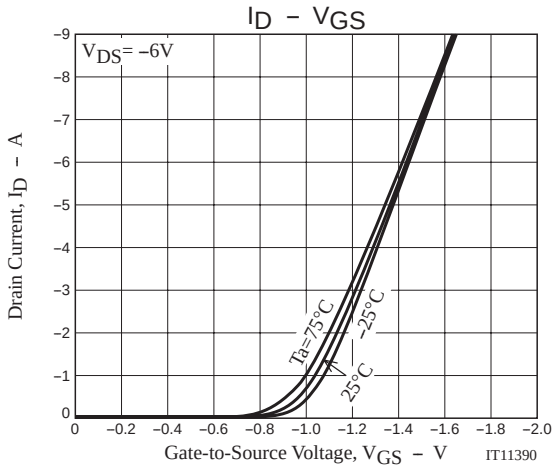
7007A-003

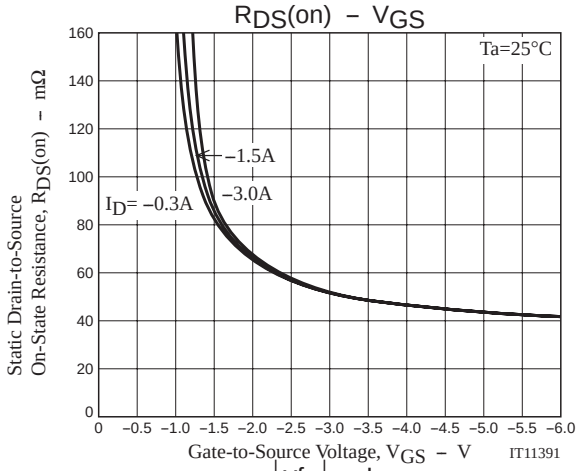


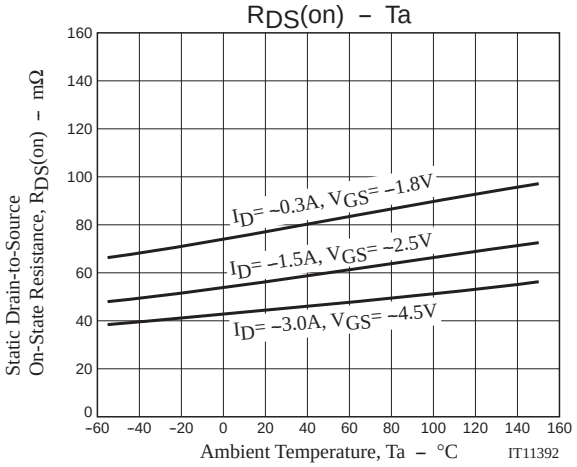
Switching Time Test Circuit

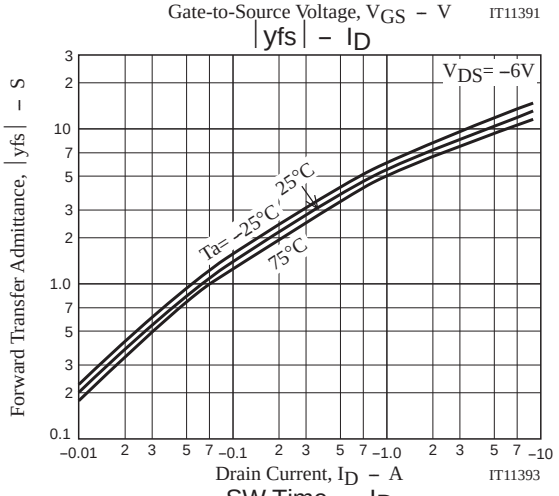


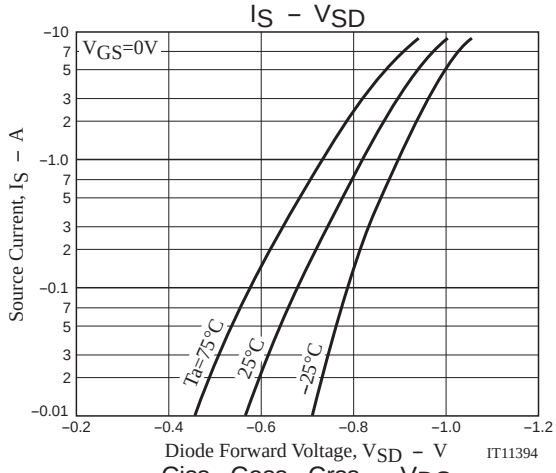


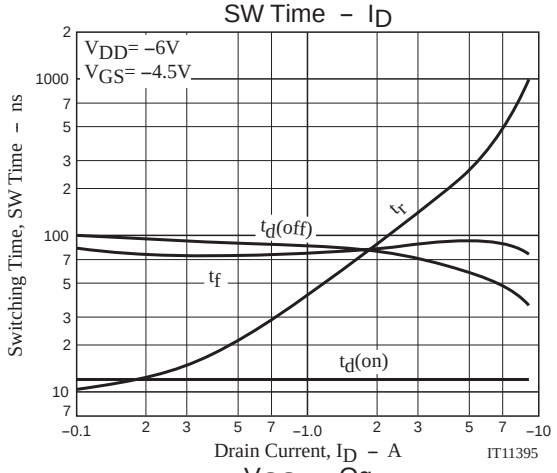


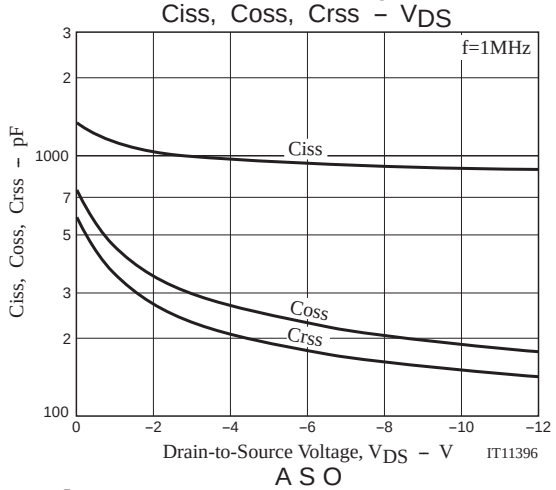


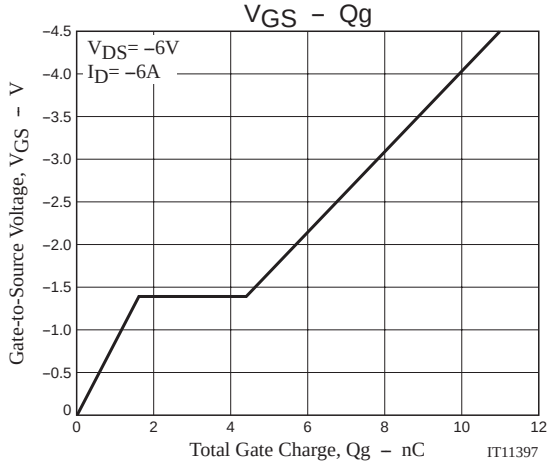


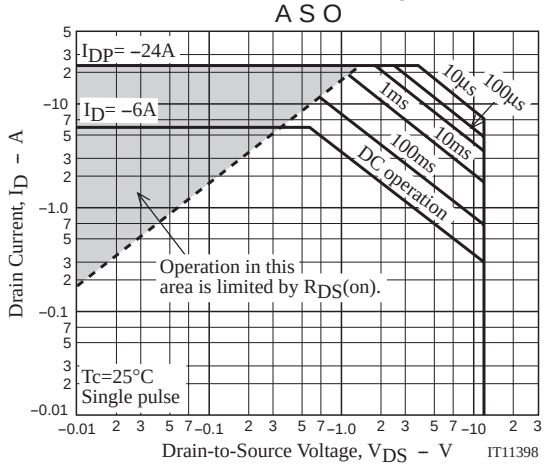


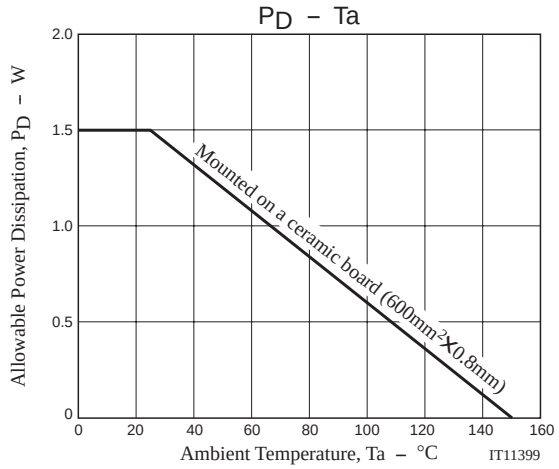


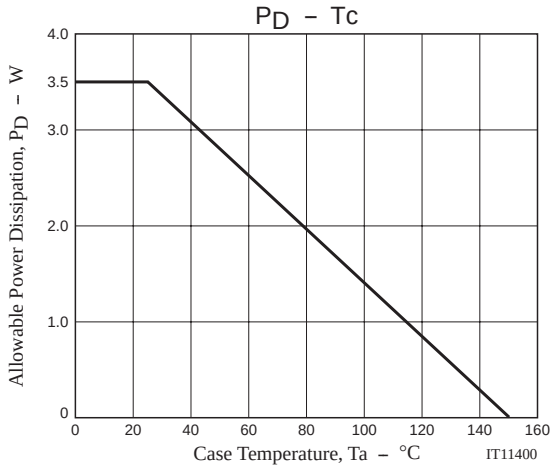












Note on usage : Since the 2SJ630 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.