



ON Semiconductor®

ON Semiconductor DATA SHEET

2SJ646 — P-Channel Silicon MOSFET General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 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		-8	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	-32	A
Allowable Power Dissipation	P _D		1	W
		T _c =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} =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	-1.2		-2.6	V
Forward Transfer Admittance	y _{fs}	V _{DS} =-10V, I _D =-4A	3.3	5.5		S
Static Drain-to-Source On-State Resistance	R _{DS(on)1}	I _D =-4A, V _{GS} =-10V		58	75	mΩ
	R _{DS(on)2}	I _D =-2A, V _{GS} =-4.5V		97	136	mΩ
	R _{DS(on)3}	I _D =-2A, V _{GS} =-4V		110	154	mΩ
Input Capacitance	C _{iss}	V _{DS} =-10V, f=1MHz		510		pF
Output Capacitance	C _{oss}	V _{DS} =-10V, f=1MHz		115		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =-10V, f=1MHz		78		pF

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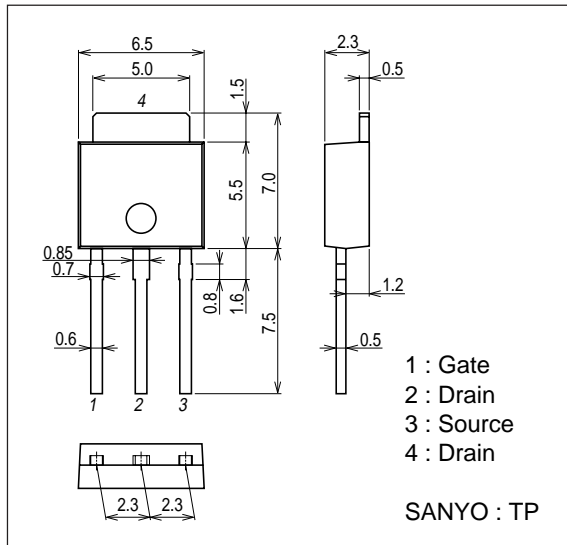
2SJ646

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		11		ns
Rise Time	t_r	See specified Test Circuit.		40		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit.		40		ns
Fall Time	t_f	See specified Test Circuit.		30		ns
Total Gate Charge	Q_g	$V_{DS}=-10V, V_{GS}=-10V, I_D=-8A$		11		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-8A$		2.4		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-8A$		1.7		nC
Diode Forward Voltage	V_{SD}	$I_S=-8A, V_{GS}=0V$		-1.0	-1.2	V

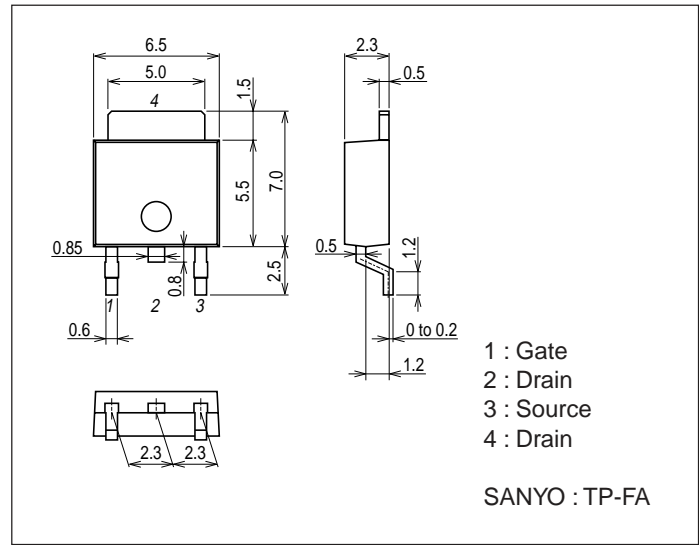
Package Dimensions

unit : mm
7518-004

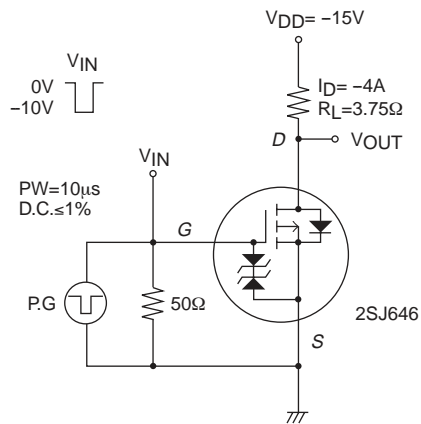


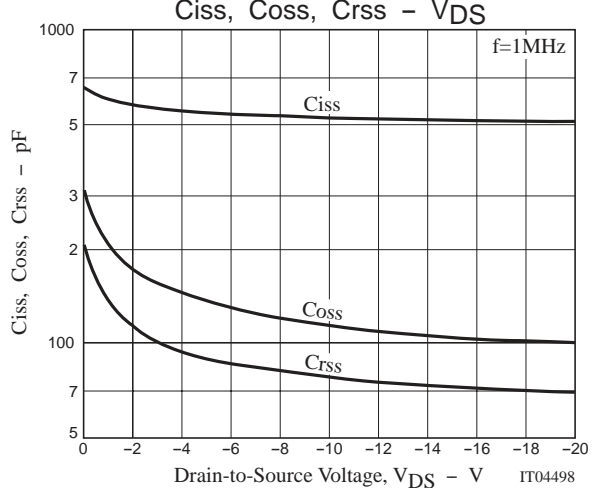
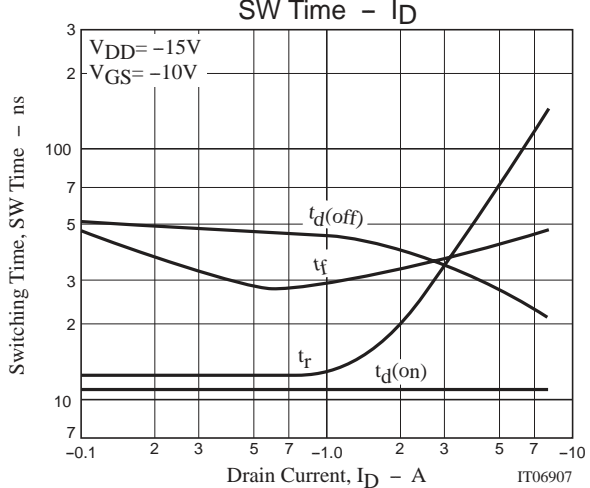
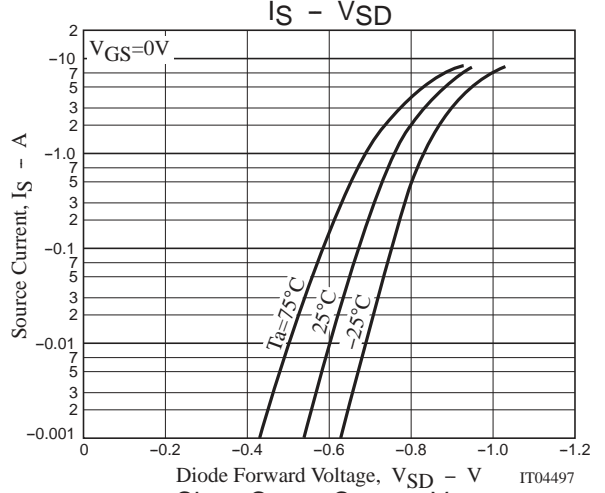
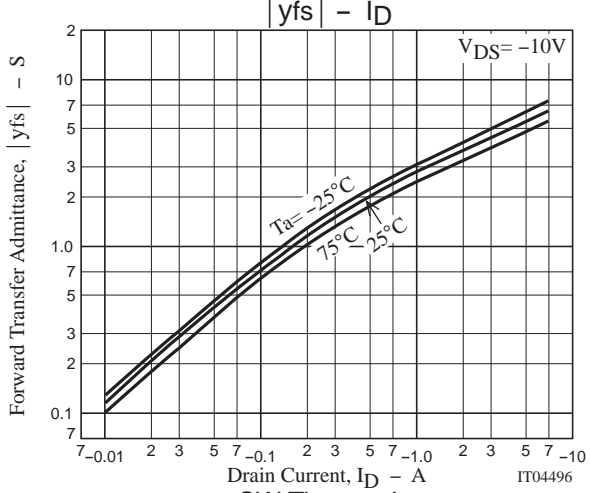
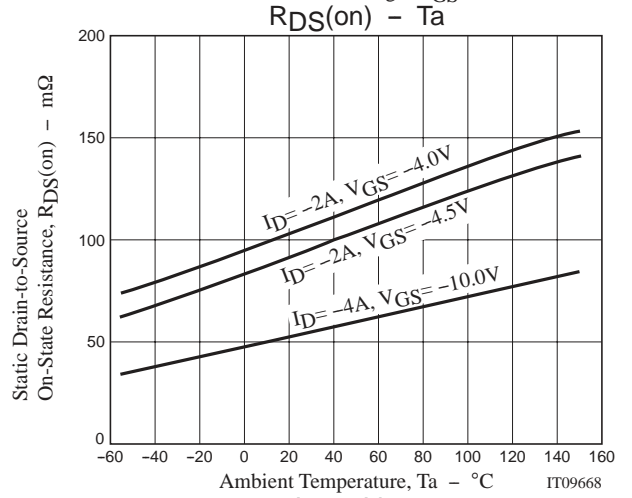
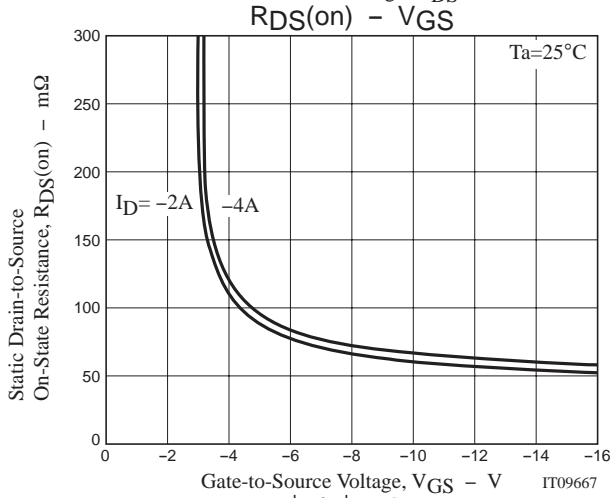
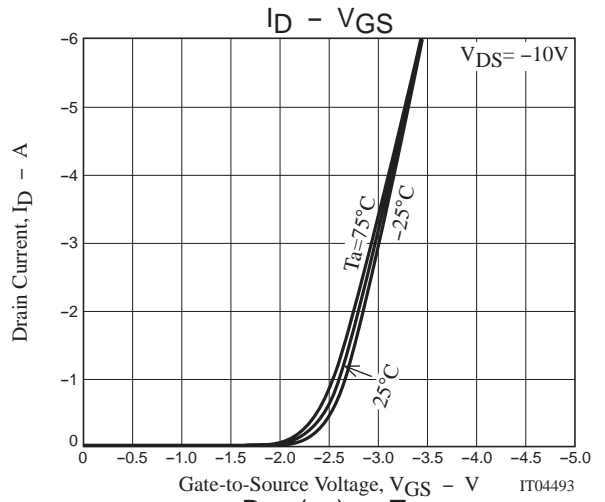
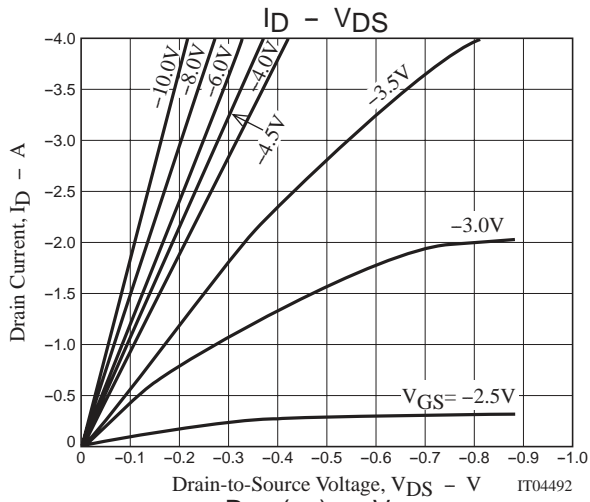
Package Dimensions

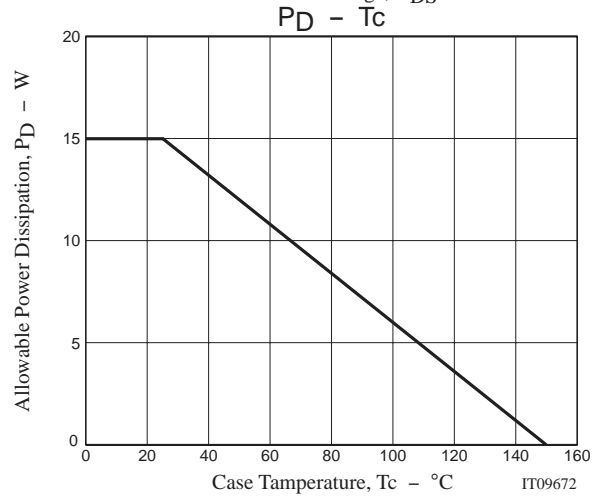
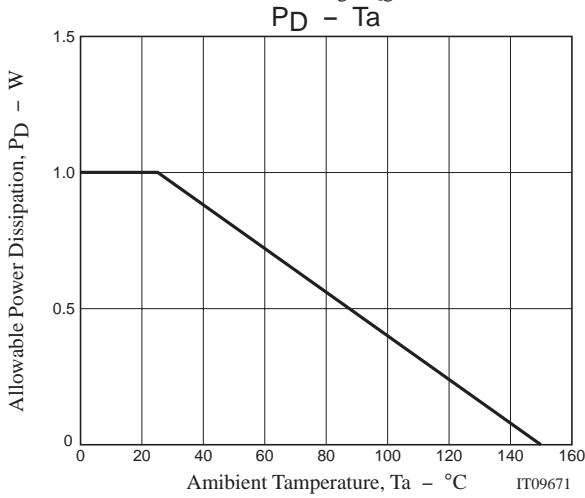
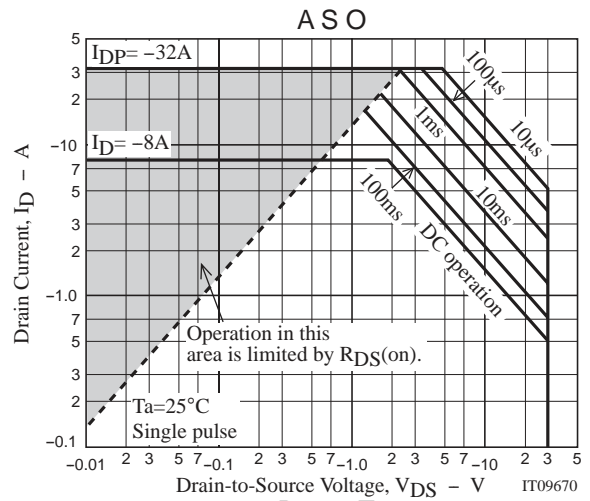
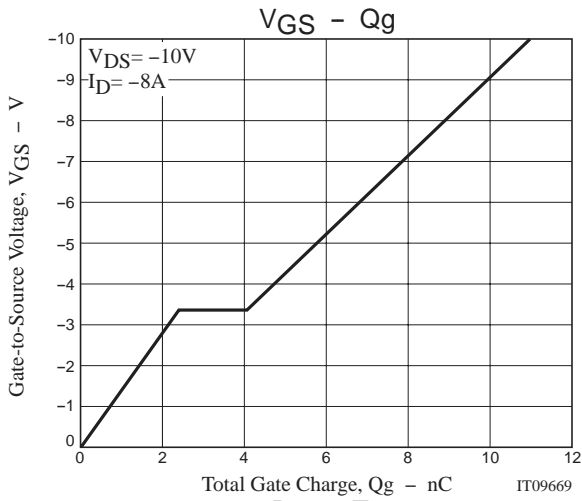
unit : mm
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Switching Time Test Circuit







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