



# 2SJ645 — P-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- Low ON-resistance.
- 2.5V drive.
- Ultrahigh-speed switching.

### Specifications

#### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-20	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±10	V
Drain Current (DC)	I <sub>D</sub>		-8	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-32	A
Allowable Power Dissipation	P <sub>D</sub>		1	W
		T <sub>c</sub> =25°C	20	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

#### Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	I <sub>D</sub> =-1mA, V <sub>GS</sub> =0V	-20			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-20V, V <sub>GS</sub> =0V			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±8V, V <sub>DS</sub> =0V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-0.4		-1.4	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-4A	5.6	8		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-4A, V <sub>GS</sub> =-4.5V		55	72	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-2A, V <sub>GS</sub> =-2.5V		77	108	mΩ
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, f=1MHz		680		pF
Output Capacitance	C <sub>oss</sub>	V <sub>DS</sub> =-10V, f=1MHz		115		pF
Reverse Transfer Capacitance	C <sub>rss</sub>	V <sub>DS</sub> =-10V, f=1MHz		80		pF
Turn-ON Delay Time	t <sub>d(on)</sub>	See specified Test Circuit.		12		ns
Rise Time	t <sub>r</sub>	See specified Test Circuit.		120		ns
Turn-OFF Delay Time	t <sub>d(off)</sub>	See specified Test Circuit.		55		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		65		ns

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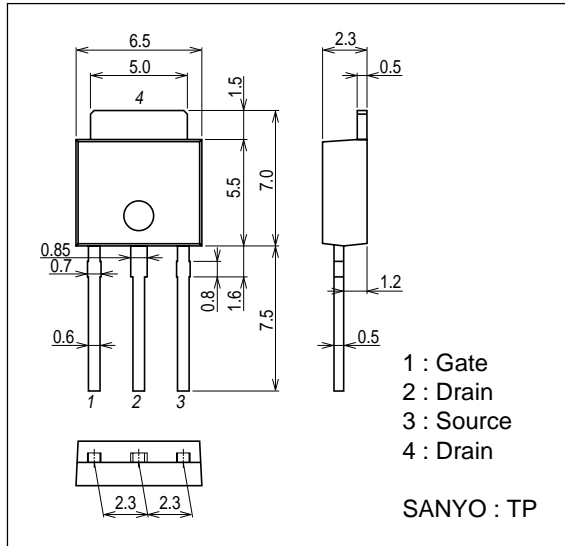
# 2SJ645

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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Qg	$V_{DS}=-10V, V_{GS}=-4.5V, I_D=-8A$		8.7		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-10V, V_{GS}=-4.5V, I_D=-8A$		1.5		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-10V, V_{GS}=-4.5V, I_D=-8A$		1.8		nC
Diode Forward Voltage	VSD	$I_S=-8A, V_{GS}=0V$		-1.0	-1.5	V

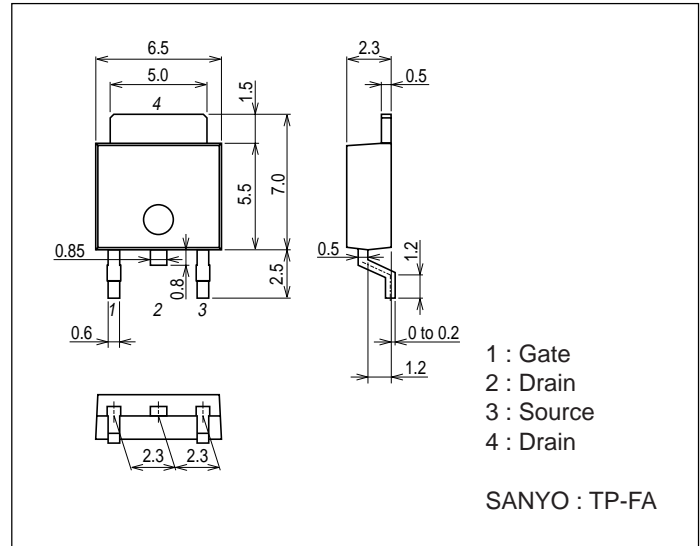
## Package Dimensions

unit : mm  
7518-004

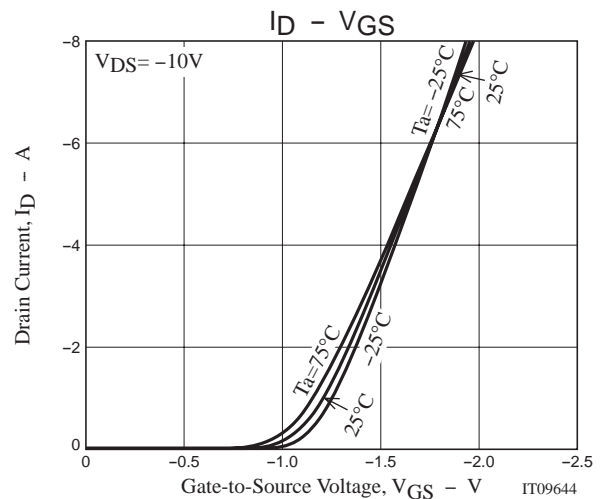
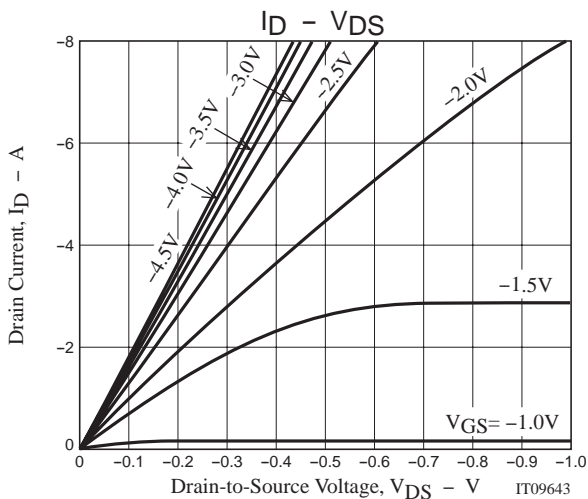
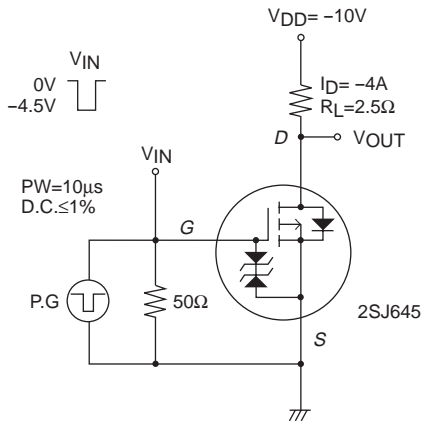


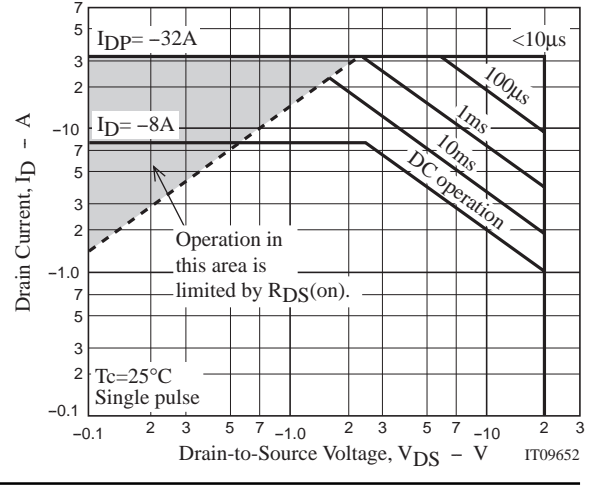
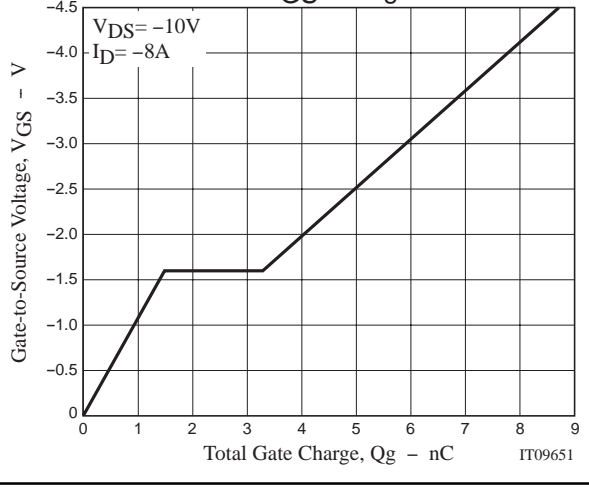
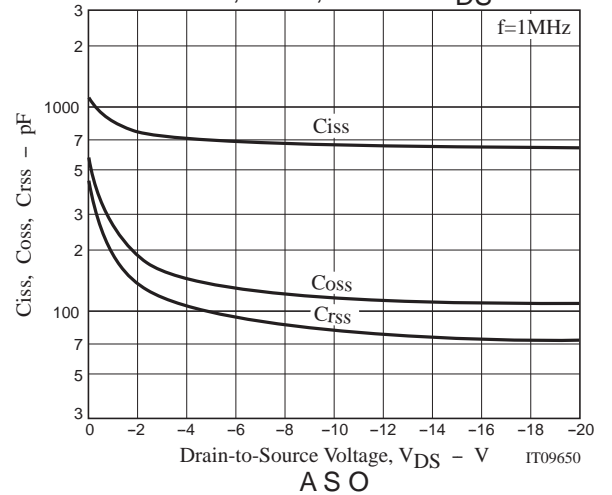
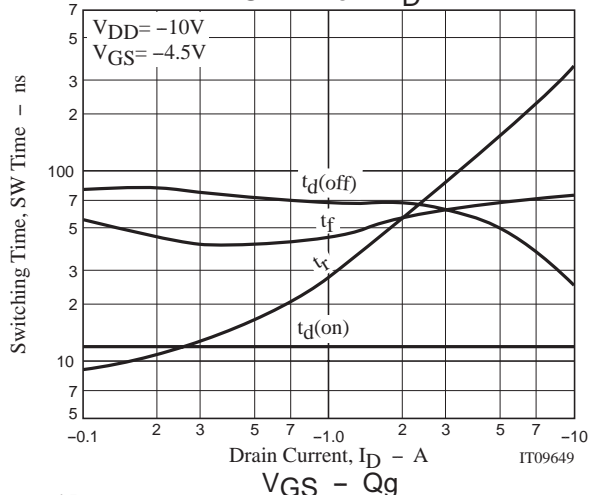
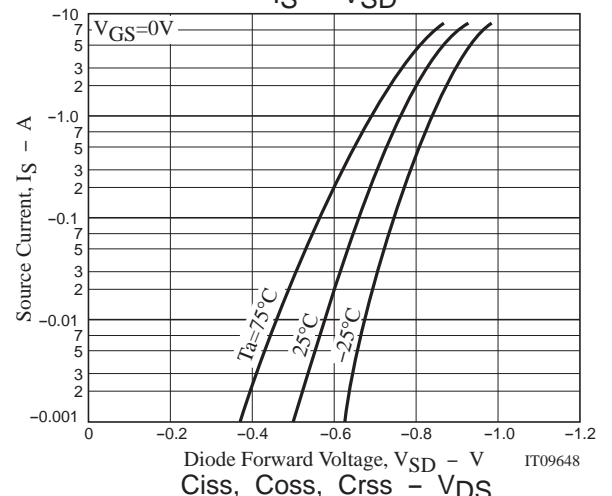
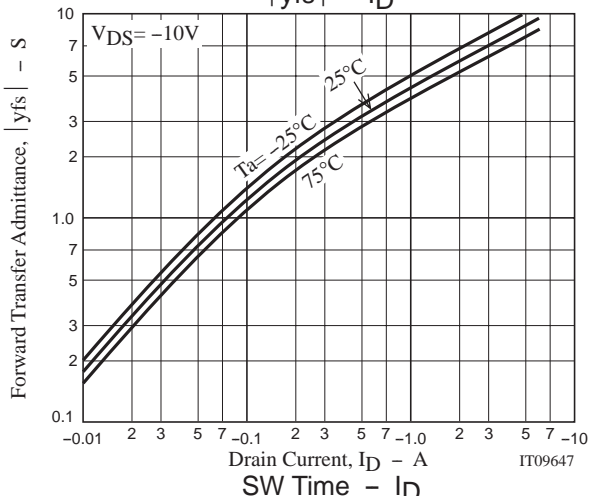
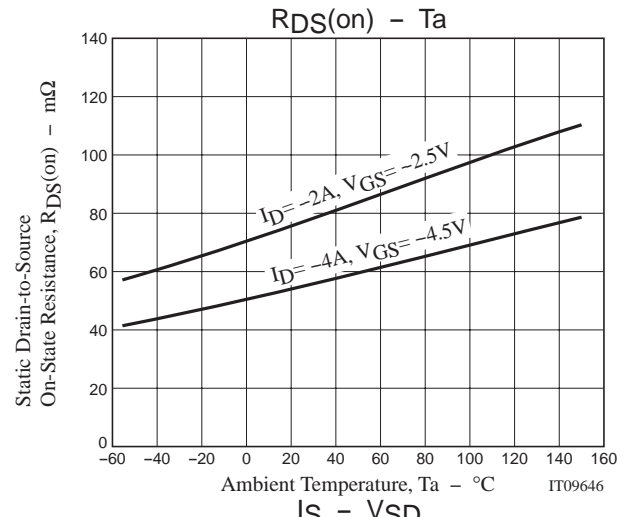
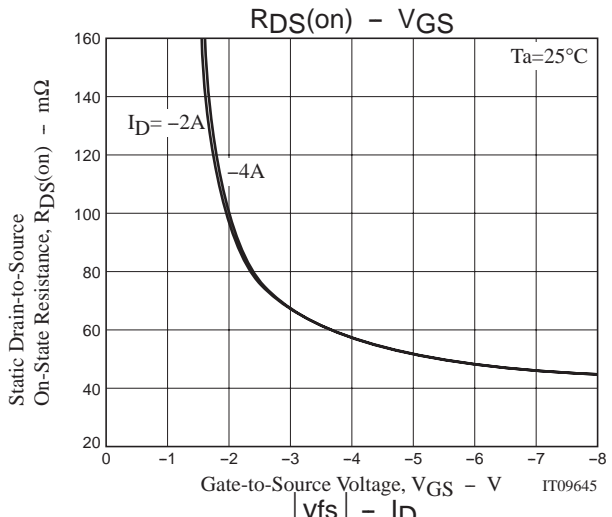
## Package Dimensions

unit : mm  
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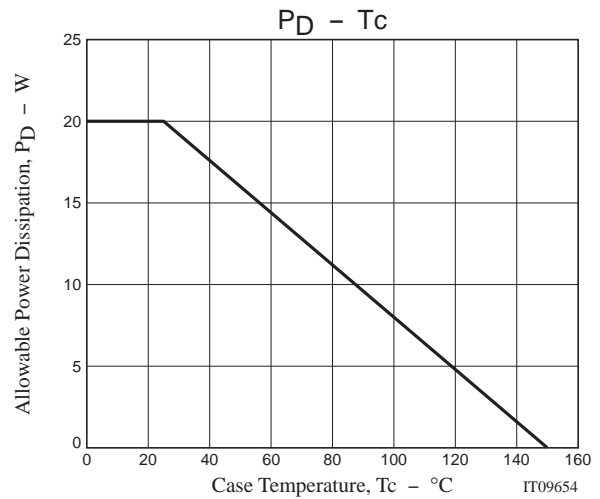
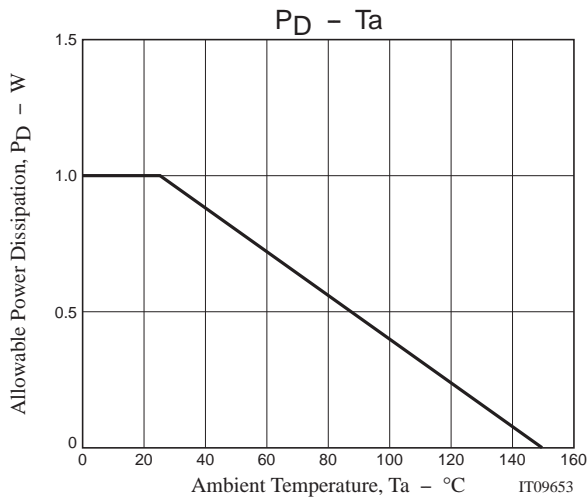


## Switching Time Test Circuit





## 2SJ645



Note on usage : Since the 2SJ645 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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