



# 2SJ666 — P-Channel Silicon MOSFET

## General-Purpose Switching Device Applications

### Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.
- Motor drive, DC / DC converter.
- Avalanche resistance guarantee.

### Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V <sub>DSS</sub>		-100	V
Gate-to-Source Voltage	V <sub>GSS</sub>		±20	V
Drain Current (DC)	I <sub>D</sub>		-36	A
Drain Current (Pulse)	I <sub>DP</sub>	PW≤10μs, duty cycle≤1%	-144	A
Allowable Power Dissipation	P <sub>D</sub>	T <sub>c</sub> =25°C	1.65	W
Channel Temperature	T <sub>ch</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C
Avalanche Energy (Single Pulse) *1	E <sub>AS</sub>		43	mJ
Avalanche Current *2	I <sub>AV</sub>		-36	A

Note : \*1 V<sub>DD</sub>=30V, L=50μH, I<sub>AV</sub>=-36A

\*2 L≤50μH, Single pulse

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	-100			V
Zero-Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-100V, V <sub>GS</sub> =0V			-1	μA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0V			±10	μA
Cutoff Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-1.2		-2.6	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-18A	21	36		S
Static Drain-to-Source On-State Resistance	R <sub>DS(on)1</sub>	I <sub>D</sub> =-18A, V <sub>GS</sub> =-10V		40	52	mΩ
	R <sub>DS(on)2</sub>	I <sub>D</sub> =-18A, V <sub>GS</sub> =-4V		50	70	mΩ

Marking : J666

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# 2SJ666

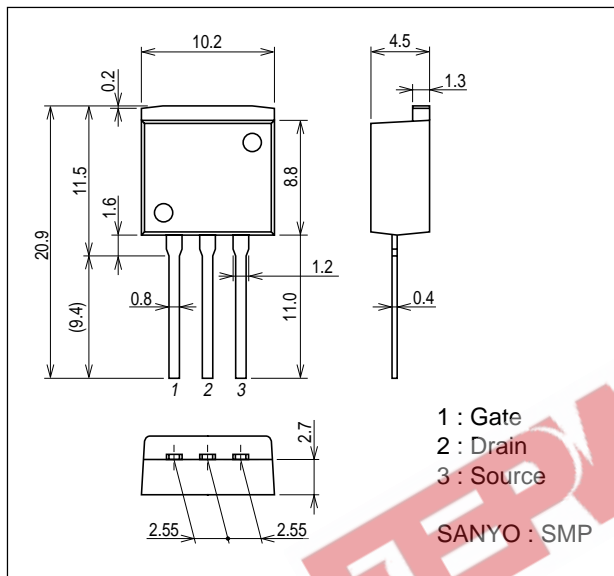
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	Ciss	$V_{DS}=-20V, f=1MHz$		6350		pF
Output Capacitance	Coss	$V_{DS}=-20V, f=1MHz$		430		pF
Reverse Transfer Capacitance	Crss	$V_{DS}=-20V, f=1MHz$		250		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit.		47		ns
Rise Time	$t_r$	See specified Test Circuit.		300		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit.		500		ns
Fall Time	$t_f$	See specified Test Circuit.		210		ns
Total Gate Charge	Qg	$V_{DS}=-50V, V_{GS}=-10V, I_D=-36A$		110		nC
Gate-to-Source Charge	Qgs	$V_{DS}=-50V, V_{GS}=-10V, I_D=-36A$		20		nC
Gate-to-Drain "Miller" Charge	Qgd	$V_{DS}=-50V, V_{GS}=-10V, I_D=-36A$		20		nC
Diode Forward Voltage	$V_{SD}$	$I_S=-36A, V_{GS}=0V$		-0.98	-1.2	V

## Package Dimensions

unit : mm

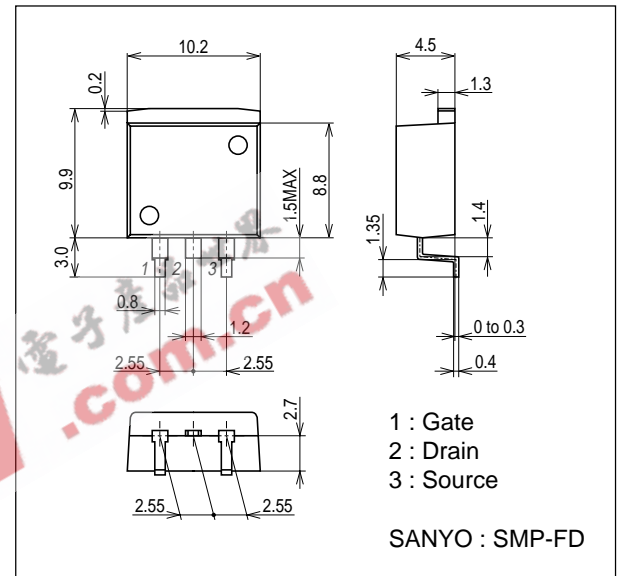
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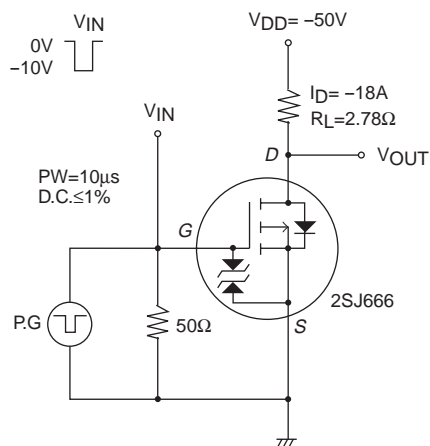
## Package Dimensions

unit : mm

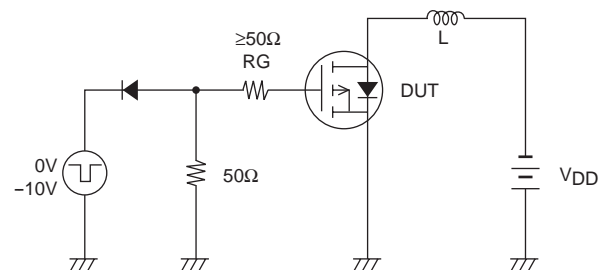
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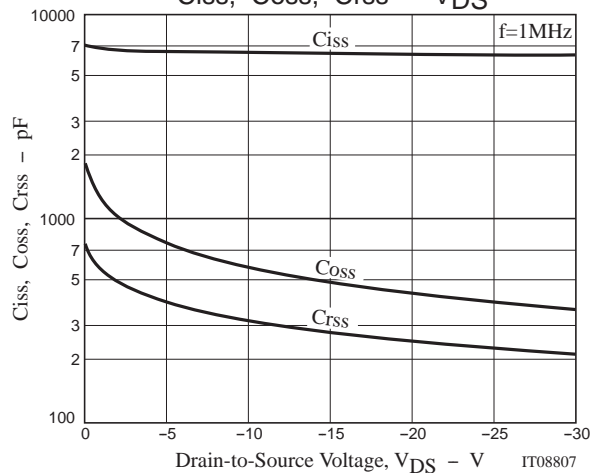
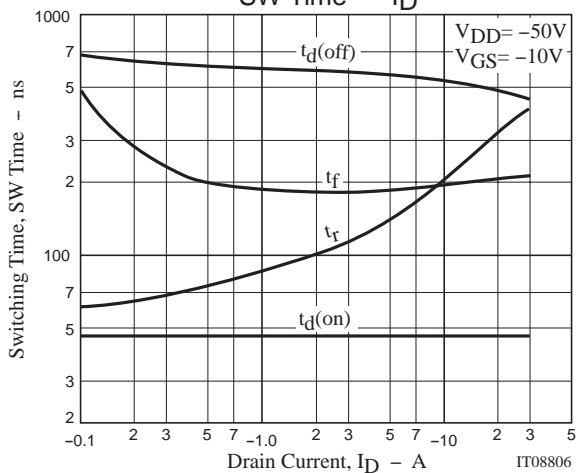
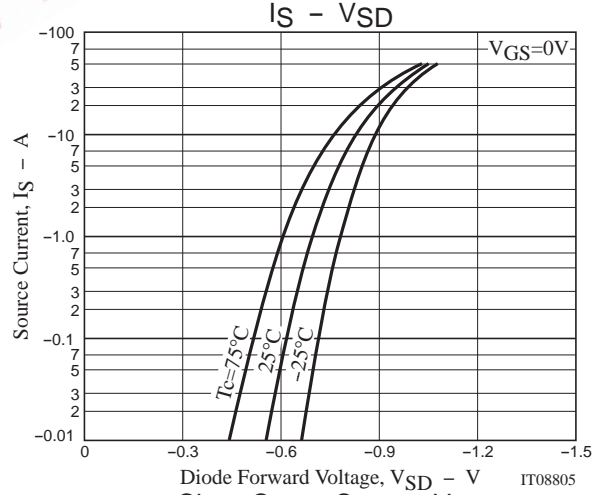
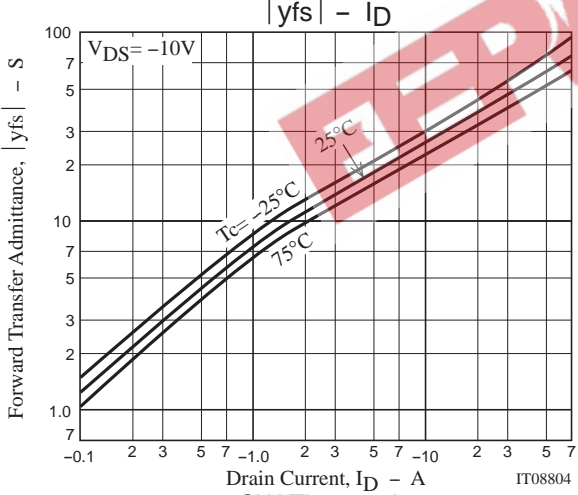
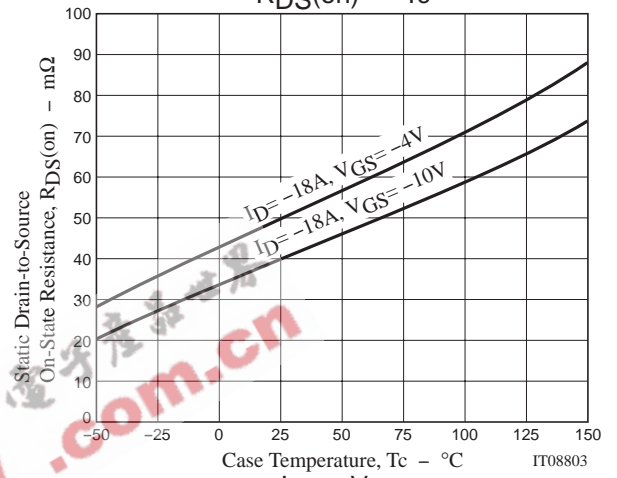
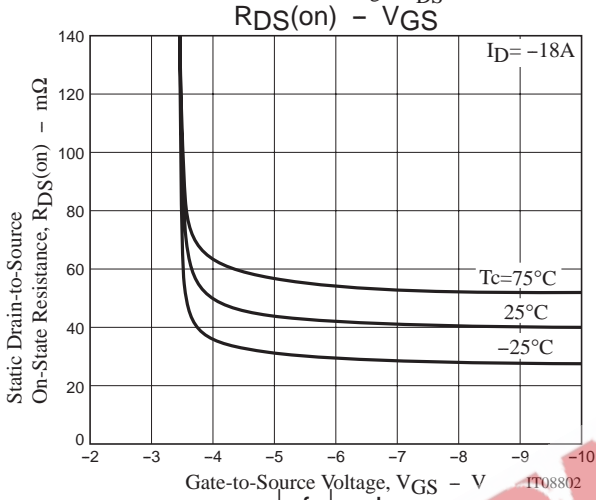
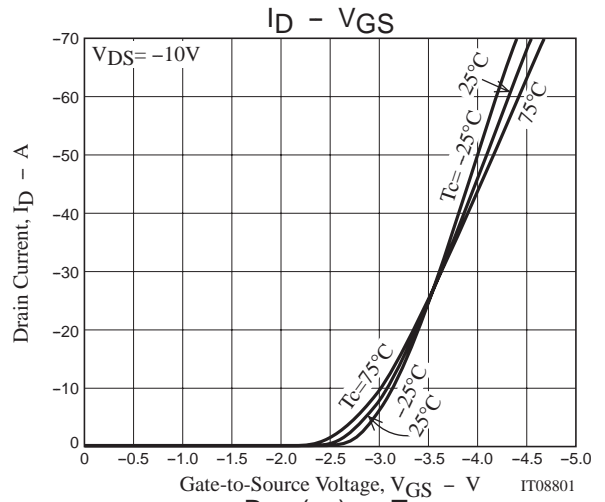
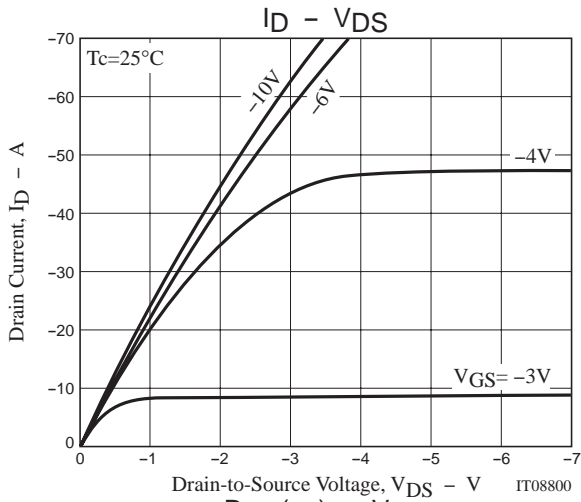


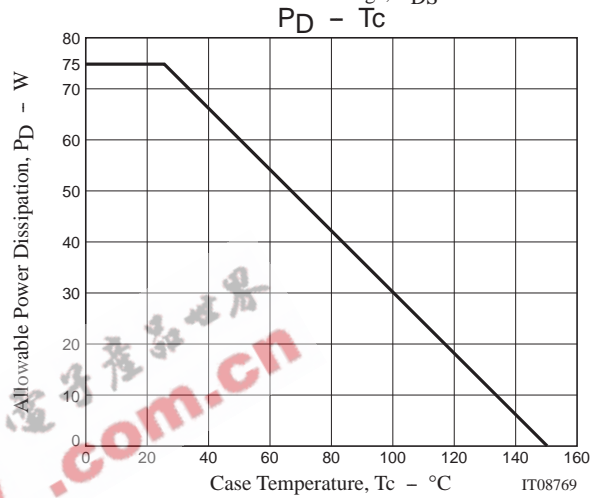
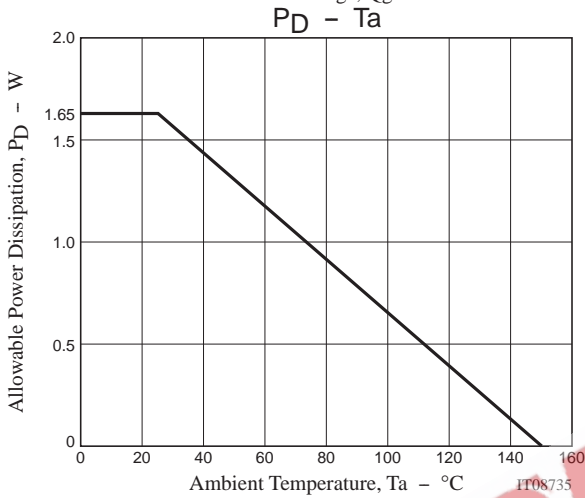
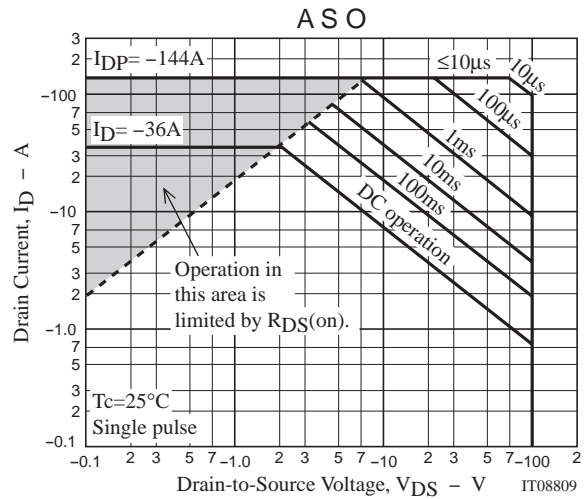
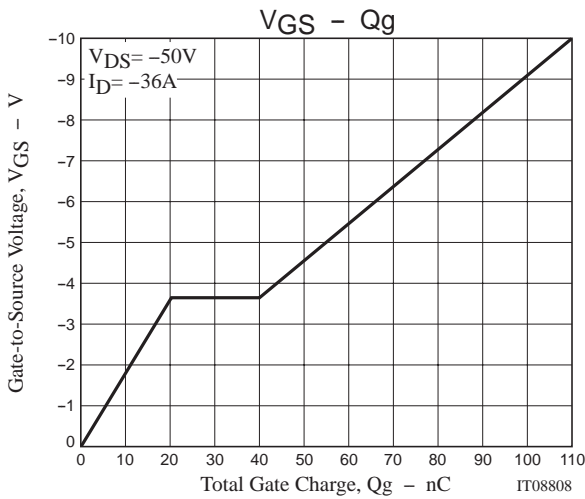
## Switching Time Test Circuit



## Avalanche Resistance Test Circuit







Note on usage : Since the 2SJ666 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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