



ON Semiconductor®

Ordering number : EN7270B

ON Semiconductor DATA SHEET

P-Channel Silicon MOSFET

2SJ616 — General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.

Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings		Unit
Drain-to-Source Voltage	VDSS			-30	V
Gate-to-Source Voltage	VGSS			± 20	V
Drain Current (DC)	Id			-6	A
Drain Current (Pulse)	IdP	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$		-24	A
Allowable Power Dissipation	PD	Mounted on a ceramic board (250mm ² × 0.8mm)		1.5	W
		T _c =25°C		3.5	W
Channel Temperature	T _{ch}			150	°C
Storage Temperature	T _{stg}			-55 to +150	°C

Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V(BR)DSS	$Id=-1\text{mA}$, $V_{GS}=0\text{V}$	-30			V
Zero-Gate Voltage Drain Current	IdSS	$V_{DS}=-30\text{V}$, $V_{GS}=0\text{V}$			-1	μA
Gate-to-Source Leakage Current	IGSS	$V_{GS}=\pm 16\text{V}$, $V_{DS}=0\text{V}$			± 10	μA
Cutoff Voltage	$V_{GS}(\text{off})$	$V_{DS}=-10\text{V}$, $Id=-1\text{mA}$	-1.2		-2.6	V
Forward Transfer Admittance	yfs	$V_{DS}=-10\text{V}$, $Id=-3\text{A}$	2.9	4.2		S
Static Drain-to-Source On-State Resistance	RDS(on)1	$Id=-3\text{A}$, $V_{GS}=-10\text{V}$		53	69	mΩ
	RDS(on)2	$Id=-1.5\text{A}$, $V_{GS}=-4\text{V}$		105	147	mΩ

Marking : JW

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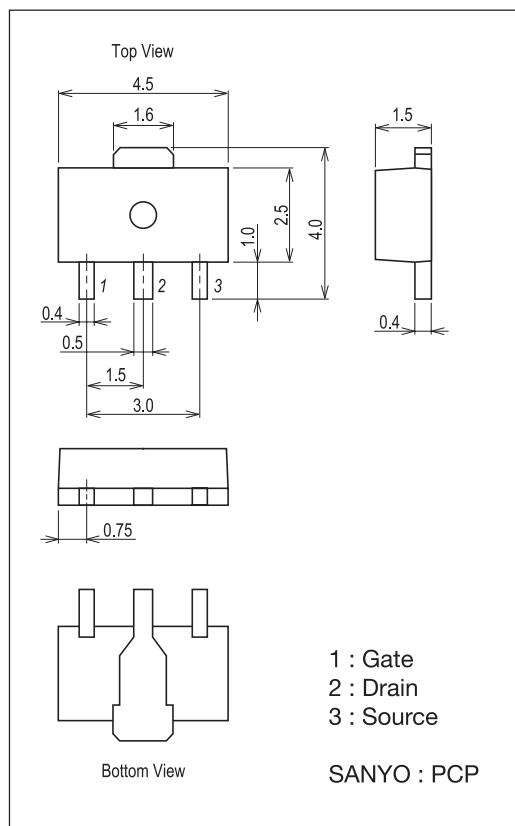
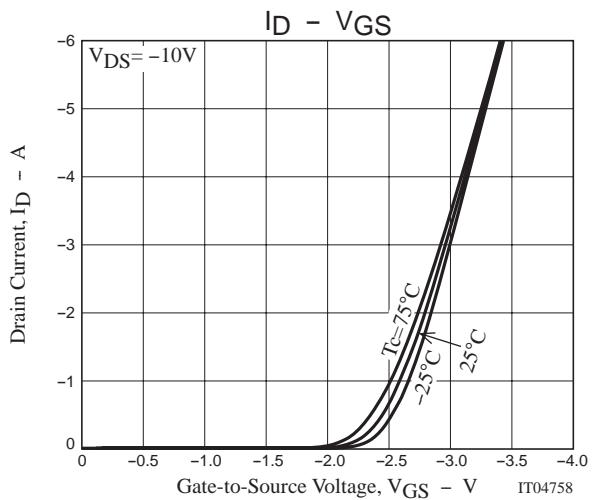
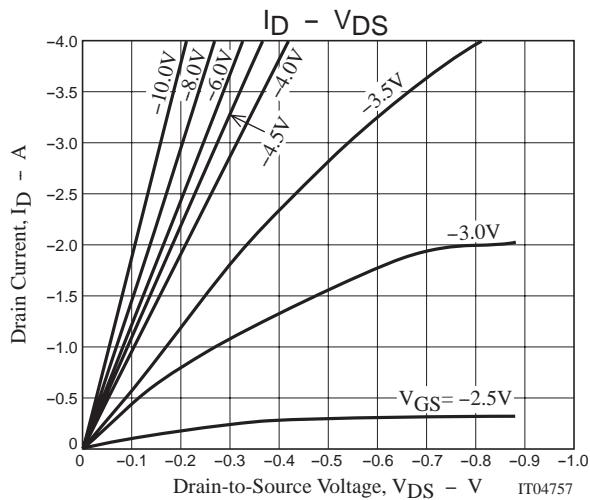
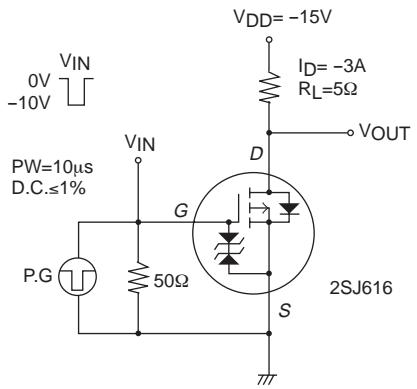
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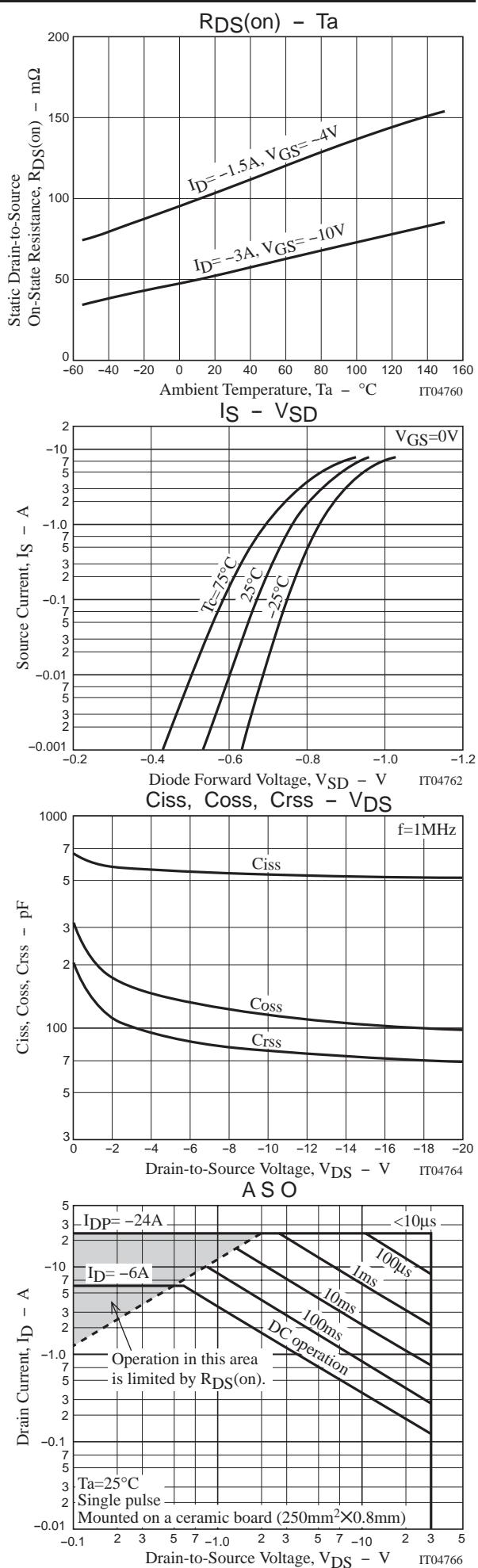
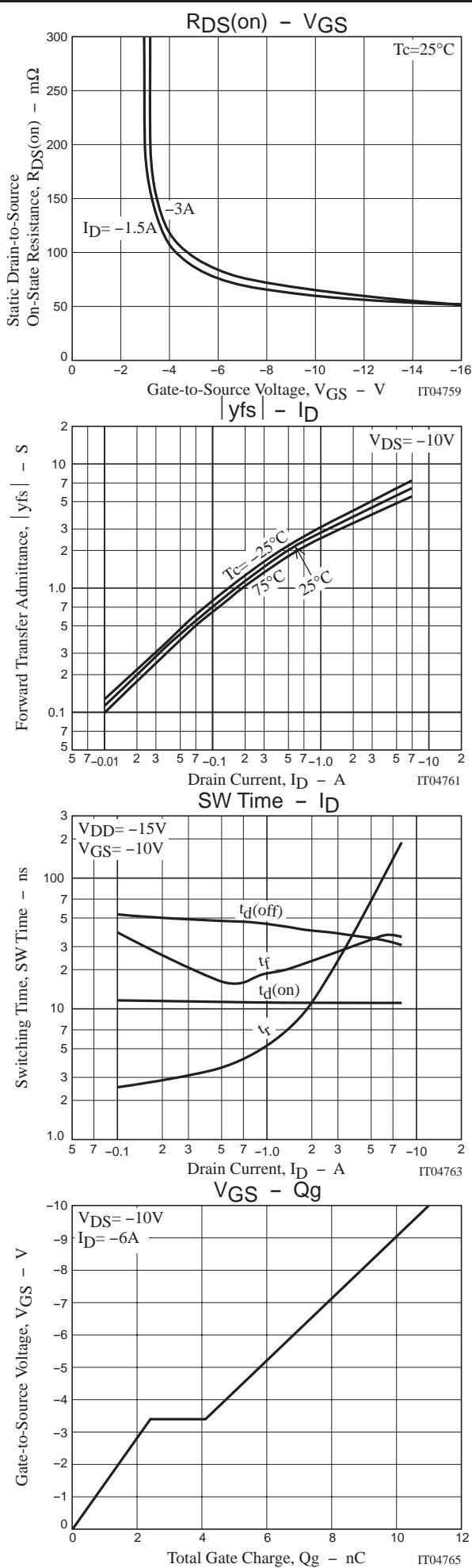
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Input Capacitance	C_{iss}	$V_{DS}=-10V, f=1MHz$		510		pF
Output Capacitance	C_{oss}	$V_{DS}=-10V, f=1MHz$		115		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=-10V, f=1MHz$		78		pF
Turn-ON Delay Time	$t_{q(on)}$	See specified Test Circuit.		11		ns
Rise Time	t_r	See specified Test Circuit.		12		ns
Turn-OFF Delay Time	$t_{q(off)}$	See specified Test Circuit.		34		ns
Fall Time	t_f	See specified Test Circuit.		23.5		ns
Total Gate Charge	Q_g	$V_{DS}=-10V, V_{GS}=-10V, I_D=-6A$		11		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-6A$		2.4		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=-10V, V_{GS}=-10V, I_D=-6A$		1.7		nC
Diode Forward Voltage	V_{SD}	$I_S=-6A, V_{GS}=0V$		-0.9	-1.5	V

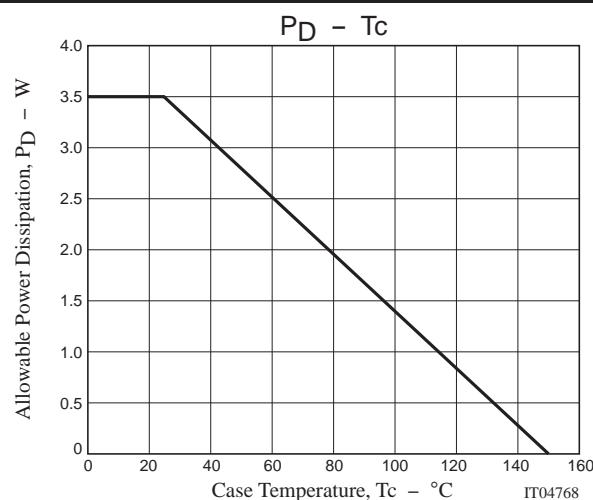
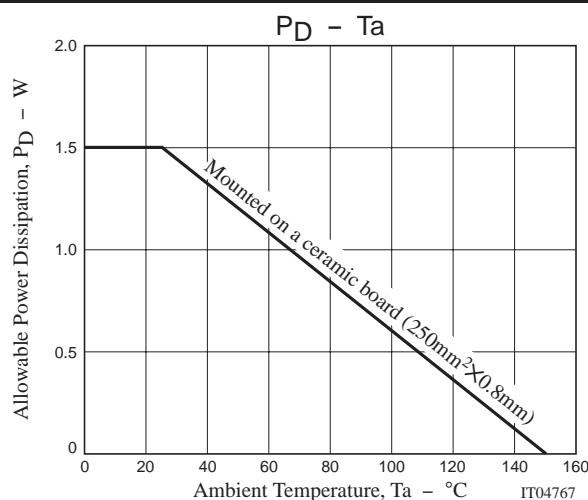
Package Dimensions

unit : mm (typ)

7007B-003

**Switching Time Test Circuit**





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