



PRODUCT DATA SHEET



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Datasheet



Resources

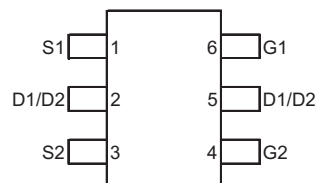
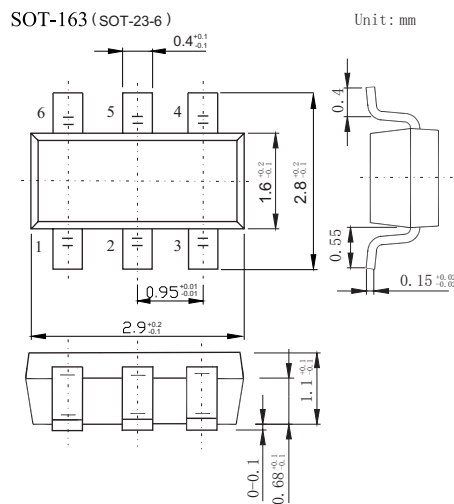
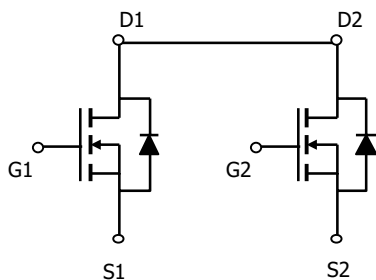


Samples

Please note: Please check the JINGAO Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.jg-semi.cn. Please email any questions regarding the system integration to JINGAO_questions@jgsemi.com.

■ Features

- $V_{DS} (V) = 20V$
- $I_D = 7 A$
- $R_{DS(ON)} < 14m\Omega$ ($V_{GS} = 4.5V$)
- $R_{DS(ON)} < 17m\Omega$ ($V_{GS} = 2.5V$)
- $R_{DS(ON)} < 21m\Omega$ ($V_{GS} = 1.8V$)



■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 8	
Continuous Drain Current	$T_A = 25^\circ C$	I_D	7	A
	$T_A = 70^\circ C$		5.7	
Pulsed Drain Current		I_{DM}	25	
Power Dissipation	$T_A = 25^\circ C$	P_D	1.5	W
	$T_A = 70^\circ C$		1	
Thermal Resistance.Junction- to-Ambient	$t \leq 10s$	R_{thJA}	90	$^\circ C/W$
	Steady-State		130	
Thermal Resistance.Junction- to-Lead		R_{thJC}	72	
Junction Temperature		T_J	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55 to 150	

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250 μA, V _{GS} =0V	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1	μA
		V _{DS} =20V, V _{GS} =0V, T _J =55°C			5	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±8V			±10	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μA	0.4		1.1	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =7A			14	mΩ
		V _{GS} =2.5V, I _D =5.5A			17	
		V _{GS} =1.8V, I _D =5A			21	
On State Drain Current	I _{D(on)}	V _{GS} =4.5V, V _{DS} =5V	25			A
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =7A		12		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =10V, f=1MHz		1200		pF
Output Capacitance	C _{oss}			160		
Reverse Transfer Capacitance	C _{rss}			80		
Total Gate Charge	Q _g	V _{GS} =4.5V, V _{DS} =10V, I _D =7A			14	nC
Gate Source Charge	Q _{gs}			4.2		
Gate Drain Charge	Q _{gd}			2.6		
Turn-On DelayTime	t _{d(on)}	V _{GS} =4.5V, V _{DS} =10V, R _L =1.54 Ω, R _G =3 Ω		270		ns
Turn-On Rise Time	t _r			320		
Turn-Off DelayTime	t _{d(off)}			3		
Turn-Off Fall Time	t _f			2.2		
Body Diode Reverse Recovery Time	t _{rr}	I _F =7A, V _{GS} =-9V, dI/dt=100A/μs		30		nC
Body Diode Reverse Recovery Charge	Q _{rr}			6.5		
Maximum Body-Diode Continuous Current	I _S				2	A
Diode Forward Voltage	V _{SD}	I _S =1A, V _{GS} =0V			1	V

■ Typical Characteristics 30

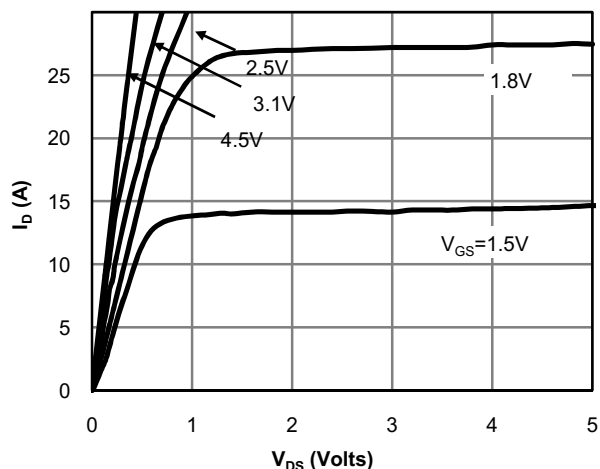


Fig 1: On-Region Characteristics (Note E)

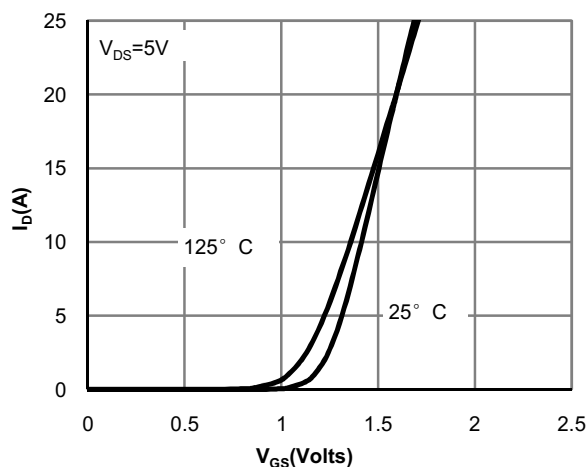


Figure 2: Transfer Characteristics (Note E)

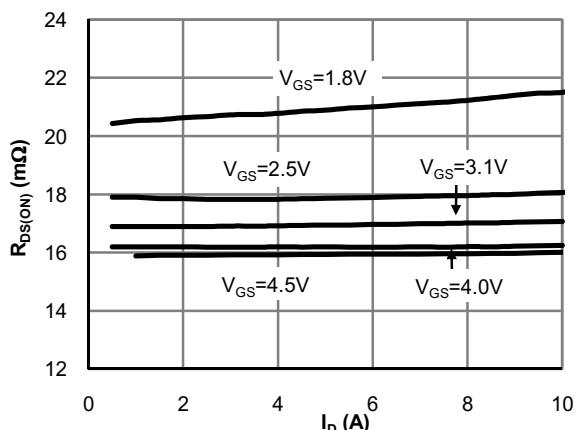


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

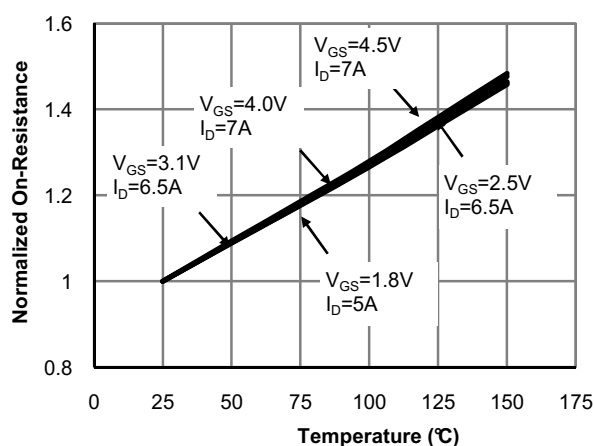


Figure 4: On-Resistance vs. Junction Temperature

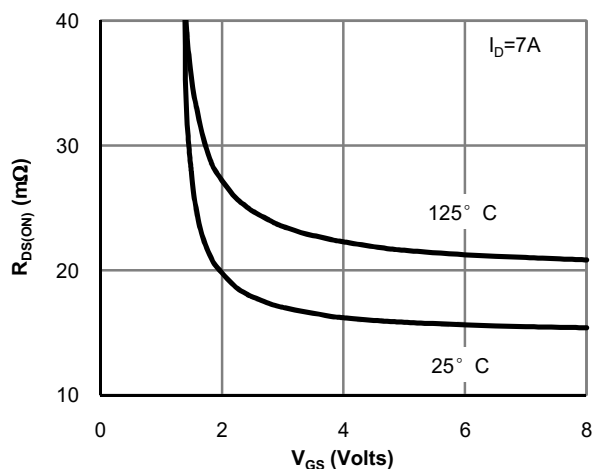


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

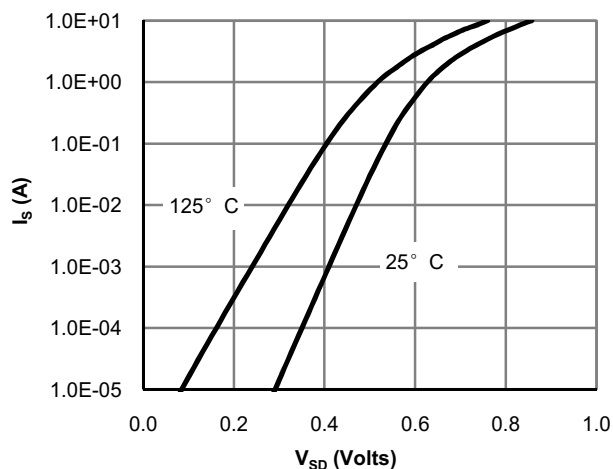
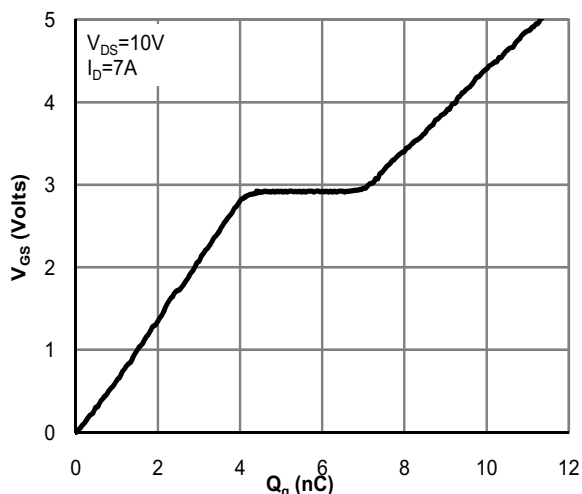
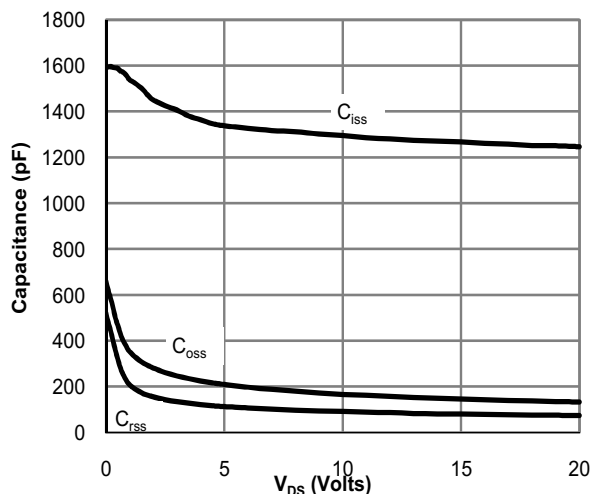
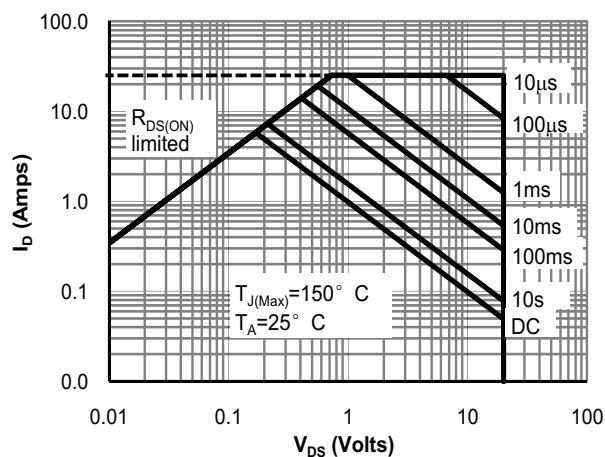
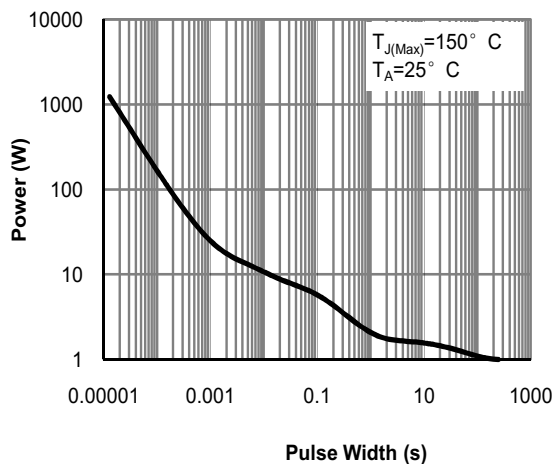
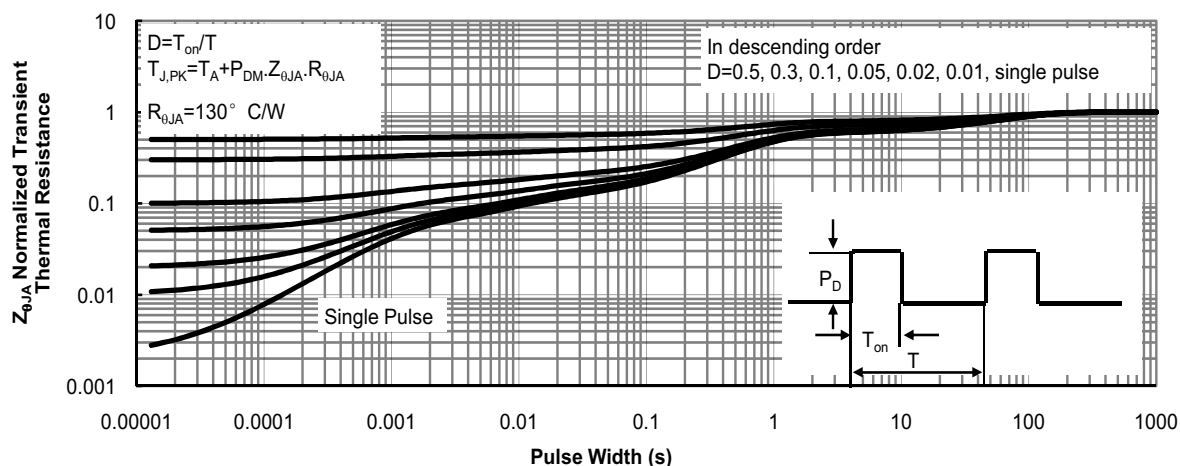


Figure 6: Body-Diode Characteristics (Note E)

■ Typical Characteristics

Figure 7: Gate-Charge Characteristics

Figure 8: Capacitance Characteristics

Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)

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