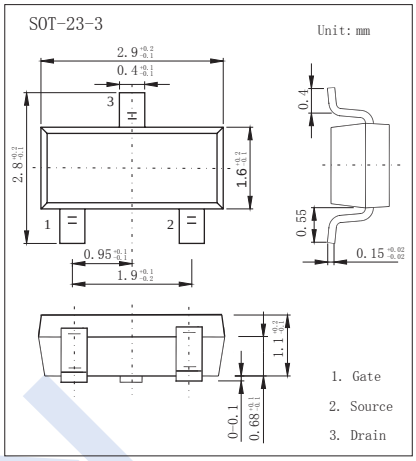
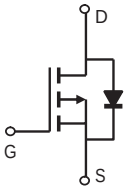
P-Channel Enhancement MOSFET

2SJ3047DS



Features

- V_{DS} (V) = -30V
- I_D = -2.6 A (V_{GS} = -10V)
- $R_{DS(ON)}$ < 130mΩ (V_{GS} = -10V)
- $R_{DS(ON)}$ < 200mΩ (V_{GS} = -4.5V)



Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_A=25℃	I_D	-2.6	A
	T_A=70℃		-2.2	
Pulsed Drain Current		I_{DM}	-20	
Power Dissipation	T_A=25℃	P_D	1.4	W
	T_A=70℃		1	
Themal Resistance. Junction-to-Ambient		R_{thJA}	125	℃/W
Themal Resistance. Junction-to-Case		R_{thJC}	80	℃/W
Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	℃

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-24V, V_{GS}=0V			-1	μA
		V_{DS}=-24V, V_{GS}=0V ,TJ=55℃			-5	
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=-250μA	-1	-1.9	-3	V
Static Drain-Source On-Resistance	$r_{DS(ON)}$	V_{GS}=-10V, I_D=-2.6A		97	130	mΩ
		V_{GS}=-10V, I_D=-2.6A T_J=125℃		135	150	
		V_{GS}=-4.5V, I_D=-2A		166	200	mΩ
On state drain current	$I_{D(ON)}$	V_{GS}=-4.5V, V_{DS}=-5V	-5			A
Forward Transconductance	g_{fs}	V_{DS}=-5V, I_D=-5A	3	3.8		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-15V, f=1MHz		302	370	pF
Output Capacitance	C_{oss}			50.3		pF
Reverse Transfer Capacitance	C_{rss}			37.8		pF
Gate resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz		12	18	Ω
Total Gate Charge (10V)	Q_g	V_{GS}=-4.5V, V_{DS}=-15V, I_D=-2.6A		6.8	9	nC
Total Gate Charge (4.5V)				2.4		nC
Gate Source Charge	Q_{gs}			1.6		nC
Gate Drain Charge	Q_{gd}			0.95		nC
Turn-On DelayTime	$t_{D(on)}$	V_{GS}=-10V, V_{DS}=-15V, R_L=5.8Ω,R_{GEN}=3Ω		7.5		ns
Turn-On Rise Time	t_r			3.2		ns
Turn-Off DelayTime	$t_{D(off)}$			17		ns
Turn-Off Fall Time	t_f			6.8		ns
Body Diode Reverse Recovery Time	t_{rr}	I_F=-2.6A, di/dt=100A/μs		16.8	22	ns
Body Diode Reverse Recovery Charge	Q_{rr}	I_F=-2.6A, di/dt=100A/μs		10		nC
Maximum Body-Diode Continuous Current	I_S				-2	A
Diode Forward Voltage	V_{SD}	I_S=-1A,V_{GS}=0V		-0.82	-1	V

* Repetitive rating, pulse width limited by junction temperature.

■ Marking

Marking	A9*

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■ Typical Characterisitics

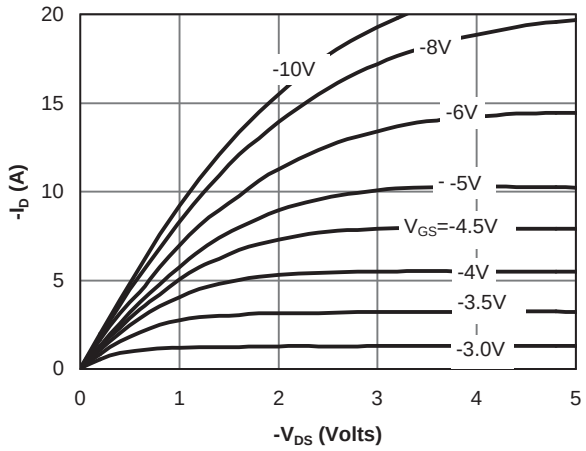

Fig 1: On-Region Characteristics

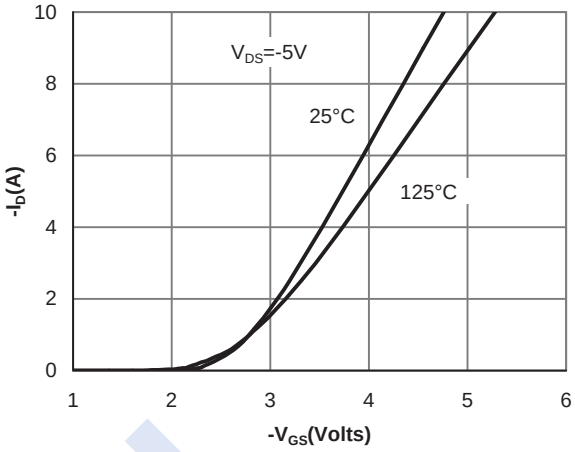

Figure 2: Transfer Characteristics

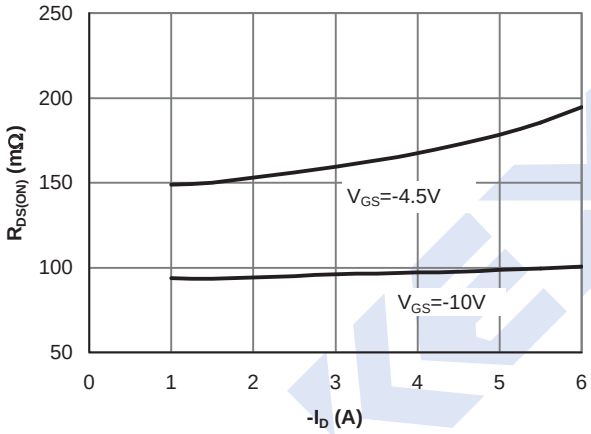

Figure 3: On-Resistance vs. Drain Current and Gate Voltage

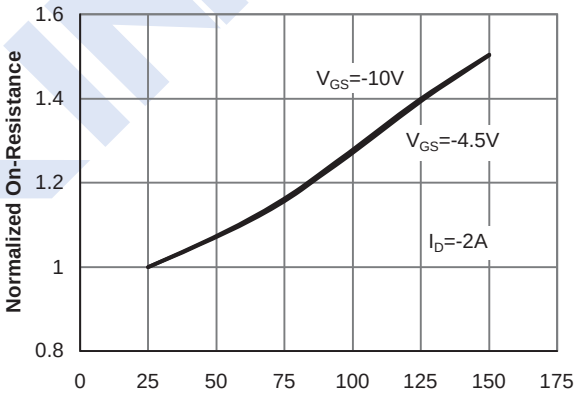

Figure 4: On-Resistance vs. Junction Temperature

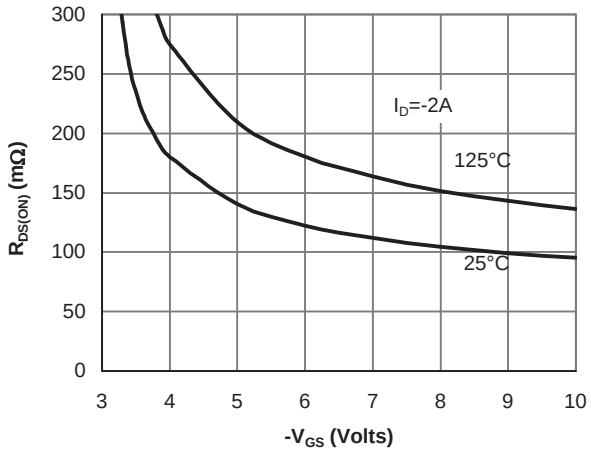

Figure 5: On-Resistance vs. Gate-Source Voltage

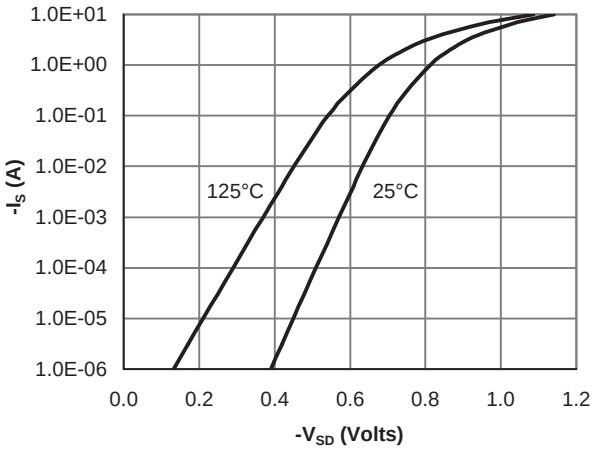

Figure 6: Body-Diode Characteristics

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■ Typical Characterisitics

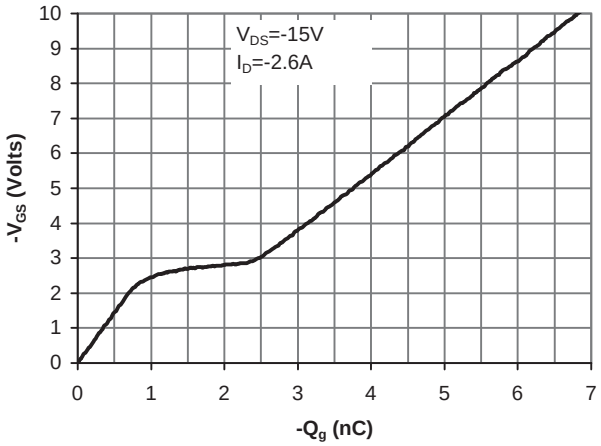

Figure 7: Gate-Charge Characteristics

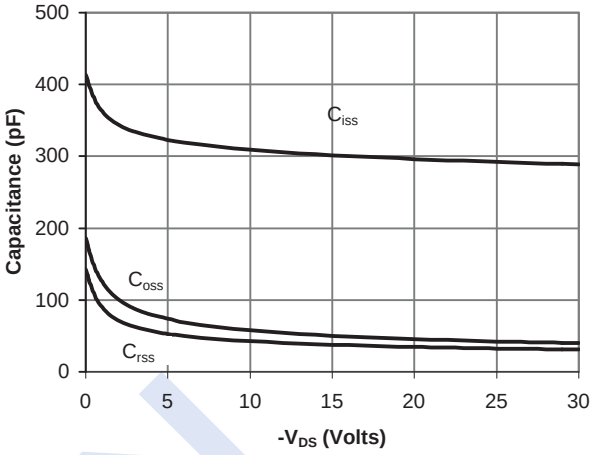

Figure 8: Capacitance Characteristics

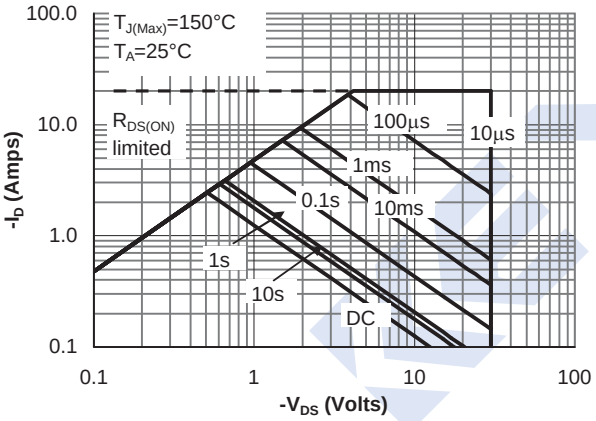

Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

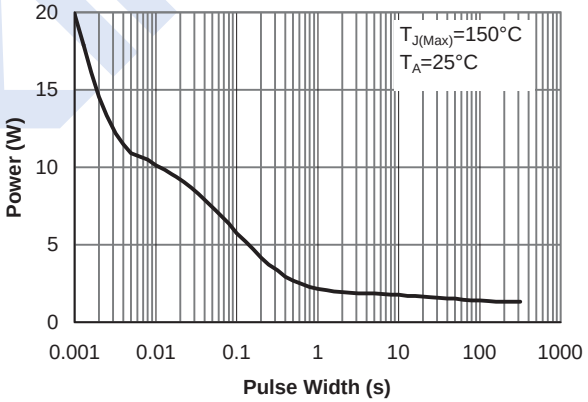

Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

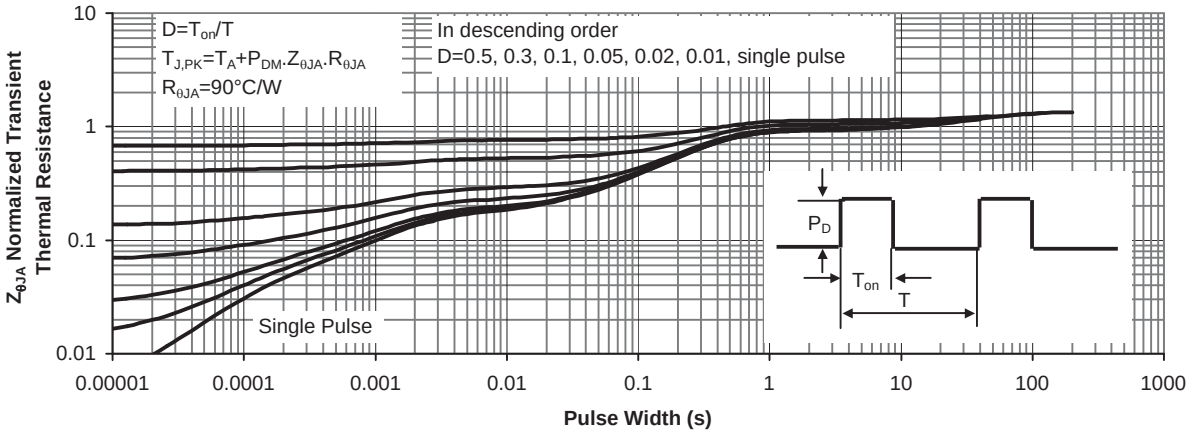

Figure 11: Normalized Maximum Transient Thermal Impedance