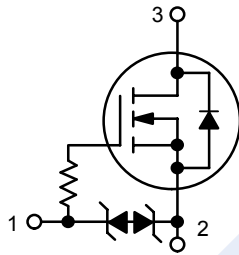
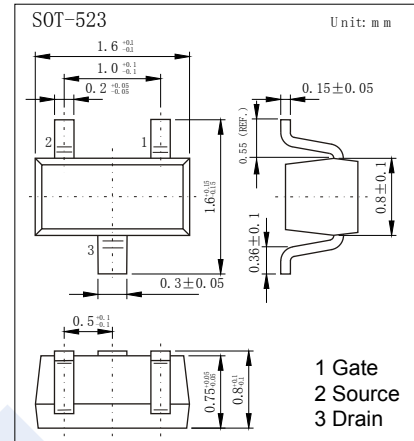


N-Channel MOSFET

NTA4153N

■ Features

- $V_{DS} (V) = 20V$
- $I_D = 915mA$
- $R_{DS(ON)} < 230m\Omega$ ($V_{GS} = 4.5V$)
- $R_{DS(ON)} < 275m\Omega$ ($V_{GS} = 2.5V$)
- $R_{DS(ON)} < 700m\Omega$ ($V_{GS} = 1.8V$)
- $R_{DS(ON)} < 950m\Omega$ ($V_{GS} = 1.5V$)



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

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	20	V	
Gate-Source Voltage	V_{GS}	± 6		
Continuous Drain Current	I_D	$T_a=25^\circ C$	915	mA
		$T_a=85^\circ C$	660	
Pulsed Drain Current	I_{DM}	1.3	A	
Power Dissipation	Steady State	P_D	300	mW
Thermal Resistance.Junction- to-Ambient	R_{thJA}	416	$^\circ C/W$	
Maximum lead temperature for soldering purposes, 1/8" from case for 5 seconds	T_L	260	$^\circ C$	
Junction Temperature	T_J	150		
Storage Temperature Range	T_{stg}	-55 to 150		

N-Channel MOSFET

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■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250μA, V _{GS} =0V	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =16V, V _{GS} =0V			100	nA
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±4.5V			±1	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μ A	0.45		1.1	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =4.5V, I _D =600mA			230	mΩ
		V _{GS} =2.5V, I _D =500mA			275	
		V _{GS} =1.8V, I _D =350mA			700	
		V _{GS} =1.5V, I _D =40mA			950	
Forward Transconductance	g _{FS}	V _{DS} =10V, I _D =400mA		1.4		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =16V, f=1MHz		110		pF
Output Capacitance	C _{oss}			16		
Reverse Transfer Capacitance	C _{rss}			12		
Total Gate Charge	Q _g			1.82		
Threshold Gate Charge	Q _{g(th)}	V _{GS} =4.5V, V _{DS} =10V, I _D =0.2A		0.2		nC
Gate Source Charge	Q _{gs}			0.3		
Gate Drain Charge	Q _{gd}			0.42		
Turn-On DelayTime	t _{d(on)}			3.7		
Turn-On Rise Time	t _r	V _{GS} = 4.5 V, V _{DD} = 10 V, I _D = 0.2 A, R _G = 10 Ω		4.4		ns
Turn-Off DelayTime	t _{d(off)}			25		
Turn-Off Fall Time	t _f			7.6		
Continuous Source Current (Body Diode)	I _S					
Diode Forward Voltage	V _{SD}	I _S =200mA, V _{GS} =0V, T _J = 25°C			1.1	V
		I _S =200mA, V _{GS} =0V, T _J = 125°C			0.54	

■ Marking

Marking	TR
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N-Channel MOSFET NTA4153N

■ Typical Characteristics

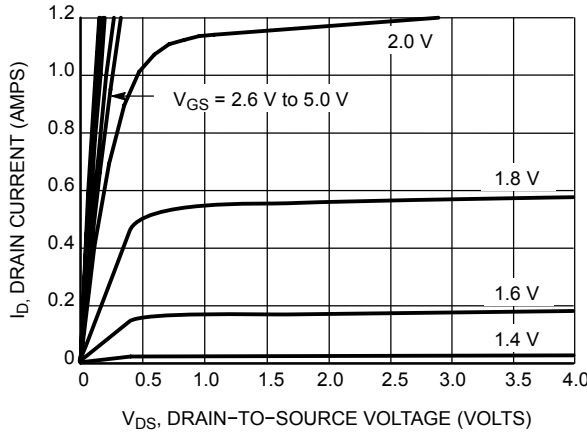


Figure 1. On-Region Characteristics

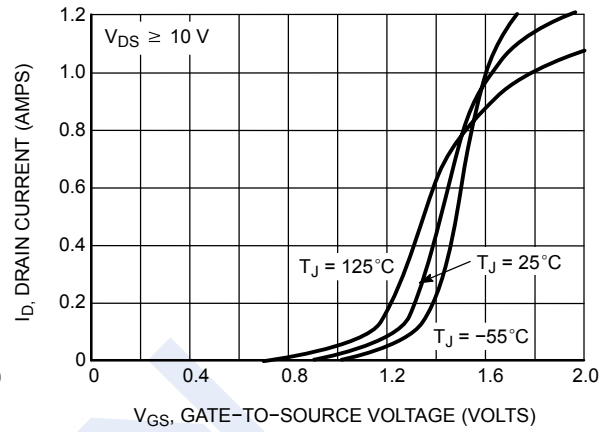


Figure 2. Transfer Characteristics

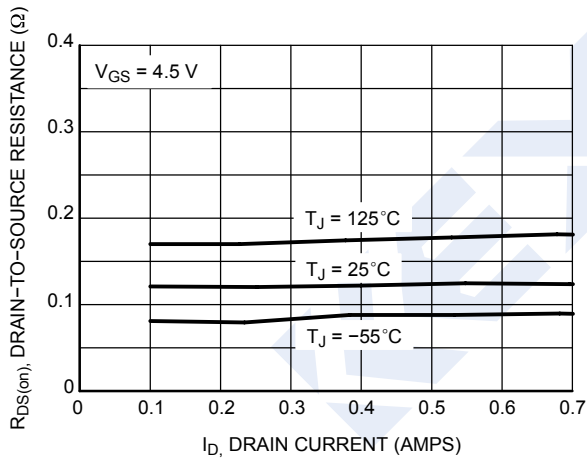


Figure 3. On-Resistance vs. Drain Current and Temperature

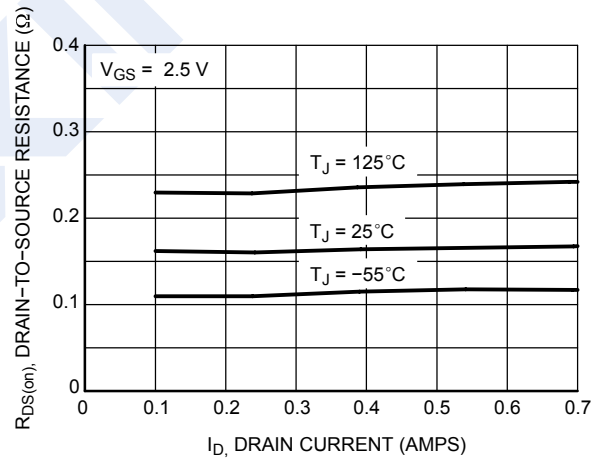


Figure 4. On-Resistance vs. Drain Current and Temperature

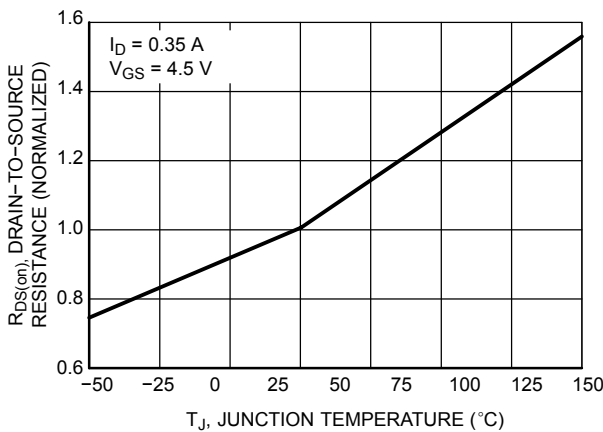


Figure 5. On-Resistance Variation with Temperature

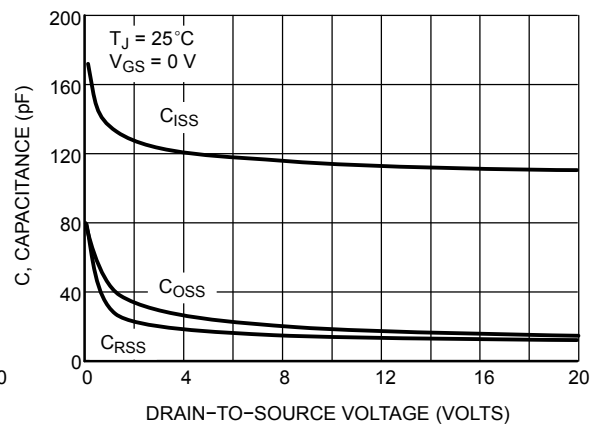


Figure 6. Capacitance Variation

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■ Typical Characteristics

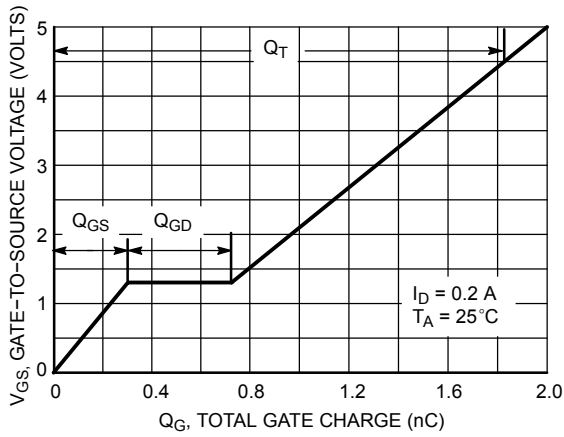


Figure 7. Gate-to-Source Voltage vs. Total Gate Charge

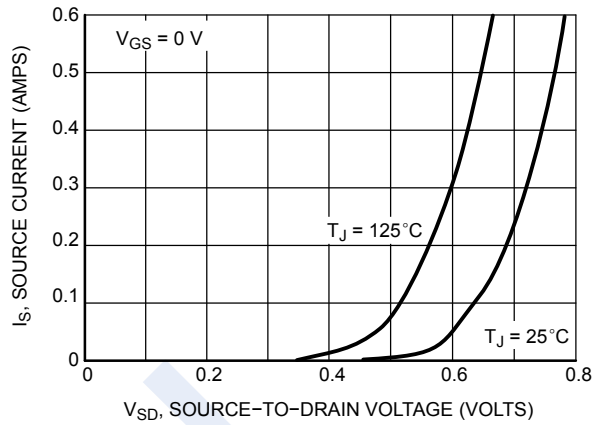


Figure 8. Diode Forward Voltage vs. Current

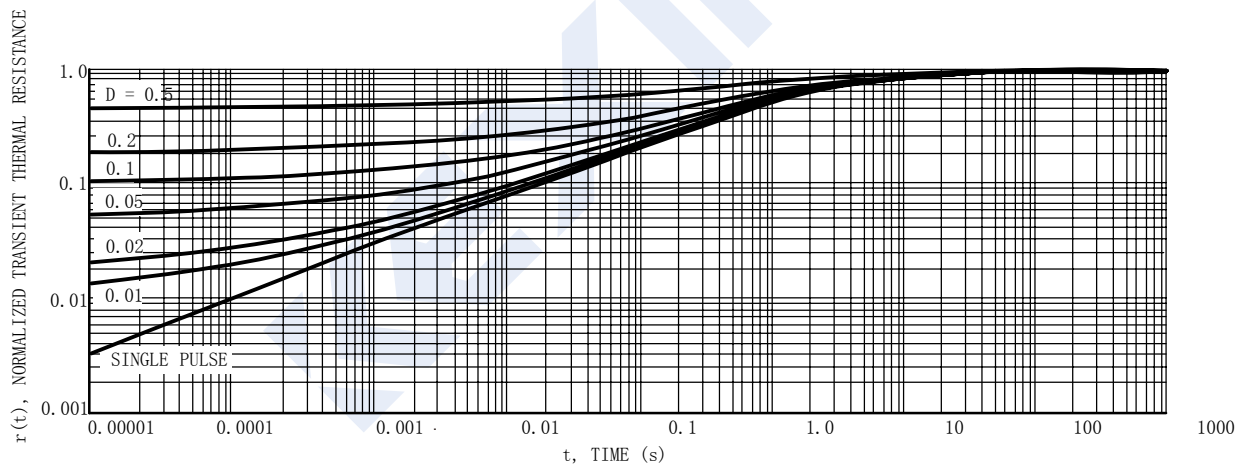


Figure 9. Normalized Thermal Response