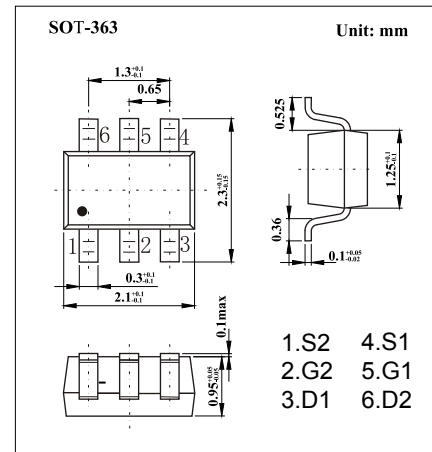
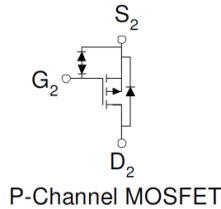
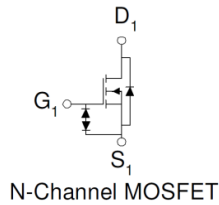
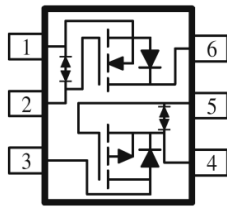


# N+P-CHANNEL MOSFET FOR SWITCHING

## RC1553

PRODUCT SUMMARY		
V <sub>bs</sub> (V)	R <sub>DS(on)</sub> (mΩ)	I <sub>D</sub> (A)
20	50 @ V <sub>GS</sub> = 4.5V	2.0
	55 @ V <sub>GS</sub> = 2.5V	1.8
-20	130 @ V <sub>GS</sub> = -4.5V	-1.5
	140 @ V <sub>GS</sub> = -2.5V	-1.2



ABSOLUTE MAXIMUM RATINGS (T = 25°C UNLESS OTHERWISE NOTED)					
Parameter	Symbol	Nch Limit	Pch Limit	Units	
Drain-Source Voltage	V <sub>DS</sub>	20	-20	V	
Gate-Source Voltage	V <sub>GS</sub>	±12	±12		
Continuous Drain Current <sup>a</sup>	I <sub>D</sub>	T <sub>A</sub> =25°C	2.0	-1.5	A
		T <sub>A</sub> =70°C	1.8	-1.2	
Pulsed Drain Current <sup>b</sup>	I <sub>DM</sub>	5	-5		
Continuous Source Current (Diode Conduction) <sup>a</sup>	I <sub>S</sub>	0.43	-0.45	A	
Power Dissipation <sup>a</sup>	P <sub>D</sub>	T <sub>A</sub> =25°C	0.3	0.3	W
		T <sub>A</sub> =70°C	0.21	0.21	
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to 150		°C	

THERMAL RESISTANCE RATINGS				
Parameter	Symbol	Maximum	Units	
Maximum Junction-to-Ambient <sup>a</sup>	R <sub>θJA</sub>	t ≤ 5 sec	415	°C/W
		Steady State	460	

### Notes

- Surface Mounted on 1" x 1" FR4 Board
- Pulse width limited by maximum junction temperature

### Marking

Marking	**
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## N+P-CHANNEL MOSFET FOR SWITCHING RC1553

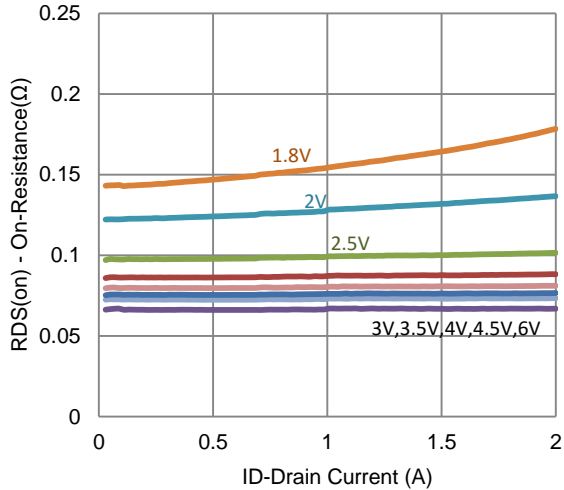
### Electrical Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Static</b>						
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250 \mu A$ <b>(N-ch)</b>	0.3			V
		$V_{DS} = V_{GS}, I_D = -250 \mu A$ <b>(P-ch)</b>	-0.3			V
Gate-Body Leakage	$I_{GSS}$	$V_{DS} = 0 V, V_{GS} = \pm 8 V$			$\pm 10$	$\mu A$
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 16 V, V_{GS} = 0 V$ <b>(N-ch)</b>			1	$\mu A$
		$V_{DS} = -16 V, V_{GS} = 0 V$ <b>(P-ch)</b>			-1	
On-State Drain Current	$I_{D(on)}$	$V_{DS} = 5 V, V_{GS} = 4.5 V$ <b>(N-ch)</b>	1.5			A
		$V_{DS} = -5 V, V_{GS} = -4.5 V$ <b>(P-ch)</b>	-1.5			A
Drain-Source On-Resistance	$r_{DS(on)}$	$V_{GS} = 4.5 V, I_D = 1.2 A$ <b>(N-ch)</b>			50	m $\Omega$
		$V_{GS} = 2.5 V, I_D = 0.96 A$ <b>(N-ch)</b>			55	
		$V_{GS} = -4.5 V, I_D = -0.8 A$ <b>(P-ch)</b>			130	m $\Omega$
		$V_{GS} = -2.5 V, I_D = -0.64 A$ <b>(P-ch)</b>			140	
Forward Transconductance	$g_{fs}$	$V_{DS} = 10 V, I_D = 1.2 A$ <b>(N-ch)</b>		3		S
		$V_{DS} = -10 V, I_D = -0.8 A$ <b>(P-ch)</b>		5		S
Diode Forward Voltage	$V_{SD}$	$I_S = 0.2 A, V_{GS} = 0 V$ <b>(N-ch)</b>		0.65		V
		$I_S = -0.2 A, V_{GS} = 0 V$ <b>(P-ch)</b>		-0.66		V
<b>Dynamic</b>						
Total Gate Charge	$Q_g$	N - Channel $V_{DS} = 10 V, V_{GS} = 4.5 V, I_D = 1.2 A$		5		nC
Gate-Source Charge	$Q_{gs}$			0.3		
Gate-Drain Charge	$Q_{gd}$			0.7		
Turn-On Delay Time	$t_{d(on)}$	N - Channel $V_{DD} = 10 V, R_L = 8.3 \Omega,$ $I_D = 1.2 A,$ $V_{GEN} = 4.5 V, R_{GEN} = 6 \Omega$		8		ns
Rise Time	$t_r$			13		
Turn-Off Delay Time	$t_{d(off)}$			25		
Fall Time	$t_f$			8		
Input Capacitance	$C_{iss}$	N - Channel $V_{DS} = 15 V, V_{GS} = 0 V, f = 1 MHz$		73		pF
Output Capacitance	$C_{oss}$			25		
Reverse Transfer Capacitance	$C_{rss}$			20		
Total Gate Charge	$Q_g$	P - Channel $V_{DS} = -10 V, V_{GS} = 4.5 V, I_D = -0.8 A$		4		nC
Gate-Source Charge	$Q_{gs}$			0.5		
Gate-Drain Charge	$Q_{gd}$			0.9		
Turn-On Delay Time	$t_{d(on)}$	P - Channel $V_{DD} = -10 V, R_L = 12.5 \Omega,$ $I_D = -0.8 A,$ $V_{GEN} = -4.5 V, R_{GEN} = 6 \Omega$		8		ns
Rise Time	$t_r$			10		
Turn-Off Delay Time	$t_{d(off)}$			28		
Fall Time	$t_f$			13		
Input Capacitance	$C_{iss}$	P - Channel $V_{DS} = -15 V, V_{GS} = 0 V, f = 1 MHz$		120		pF
Output Capacitance	$C_{oss}$			28		
Reverse Transfer Capacitance	$C_{rss}$			25		

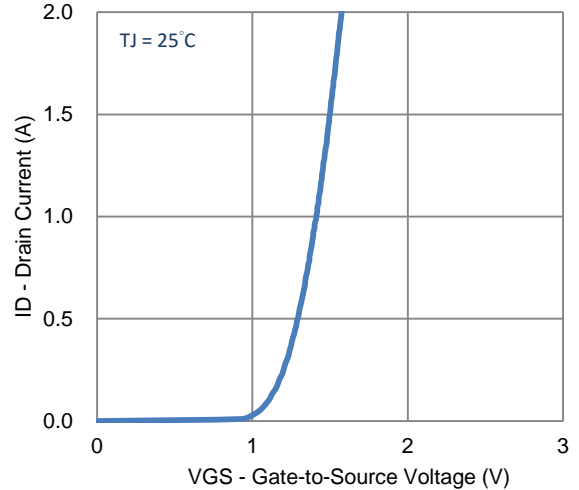
# N+P-CHANNEL MOSFET FOR SWITCHING

## RC1553

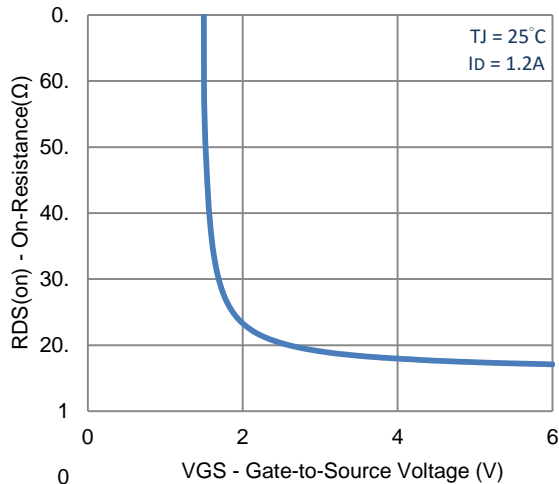
### Typical Electrical Characteristics - N-channel



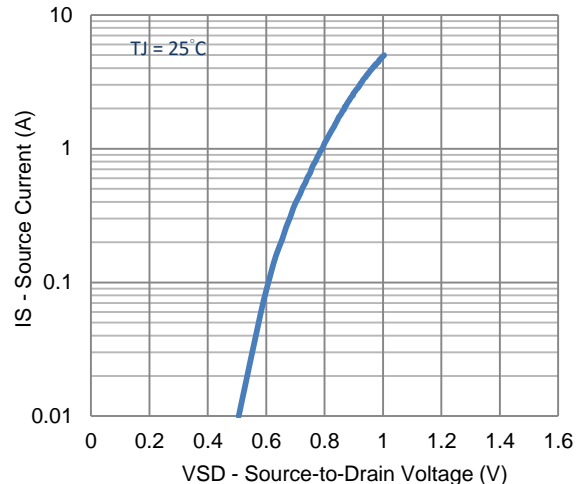
1. On-Resistance vs. Drain Current



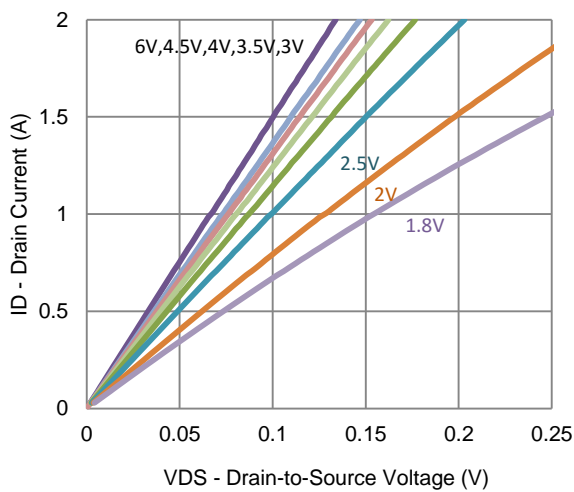
2. Transfer Characteristics



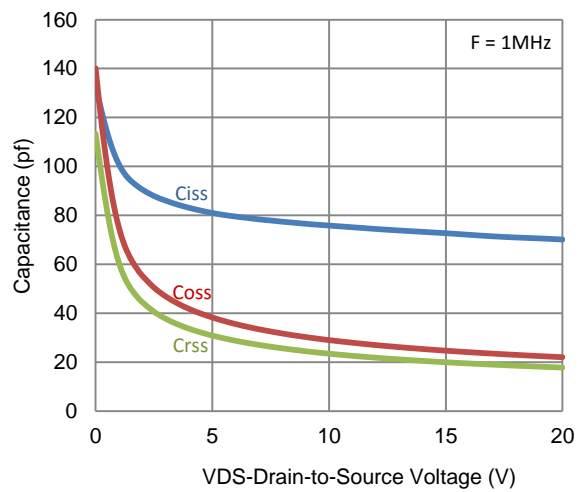
3. On-Resistance vs. Gate-to-Source Voltage



4. Drain-to-Source Forward Voltage



5. Output Characteristics

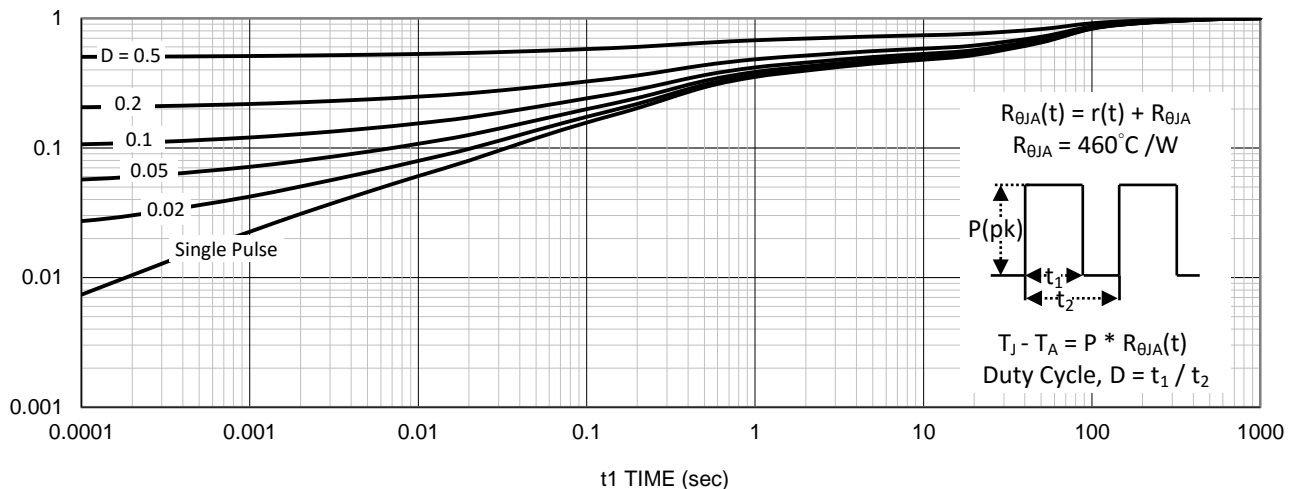
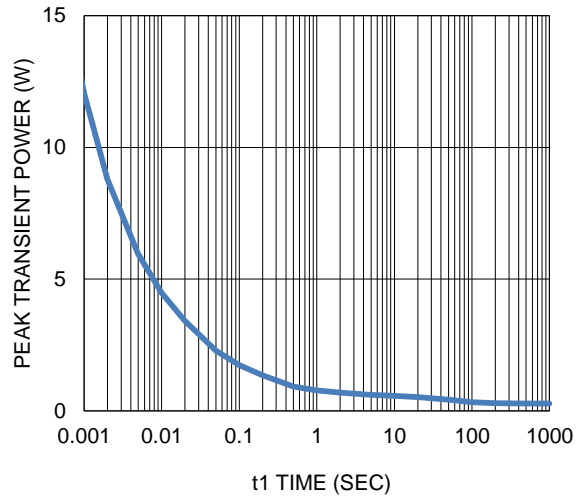
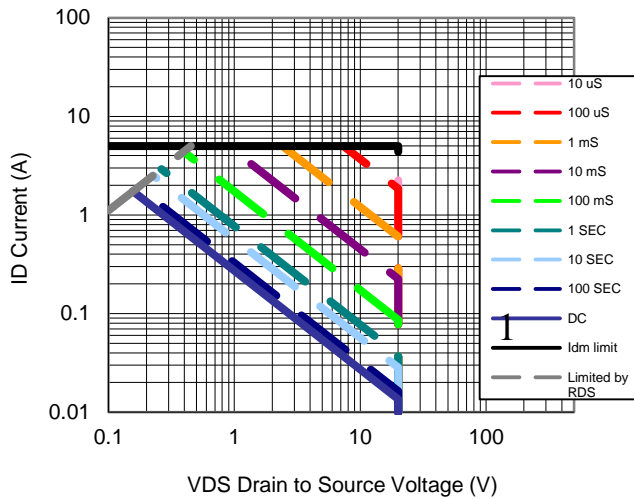
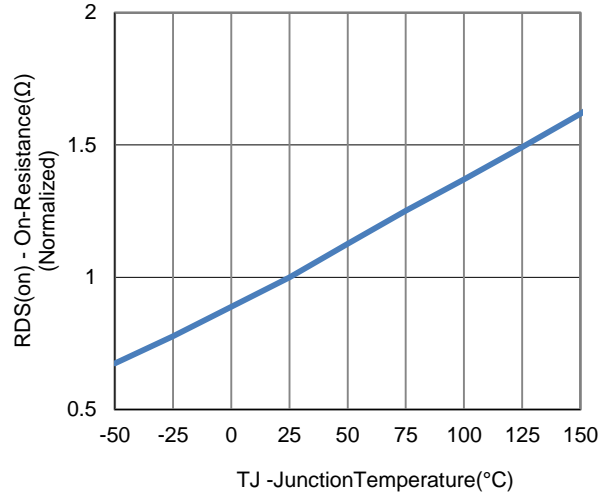
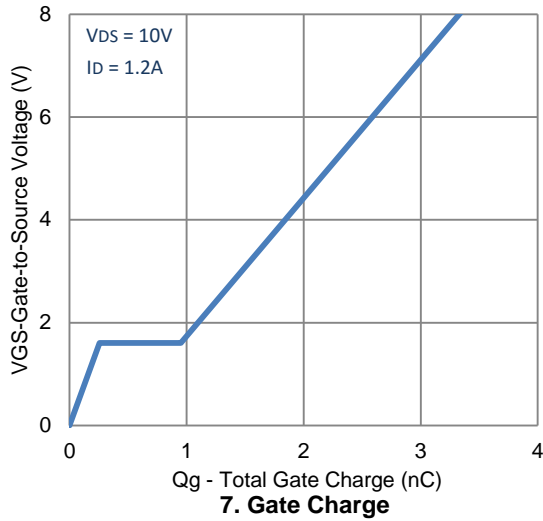


6. Capacitance

# N+P-CHANNEL MOSFET FOR SWITCHING

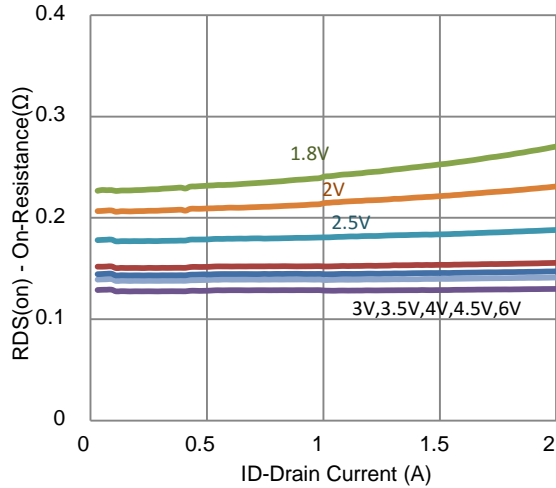
## RC1553

### Typical Electrical Characteristics - N-channel

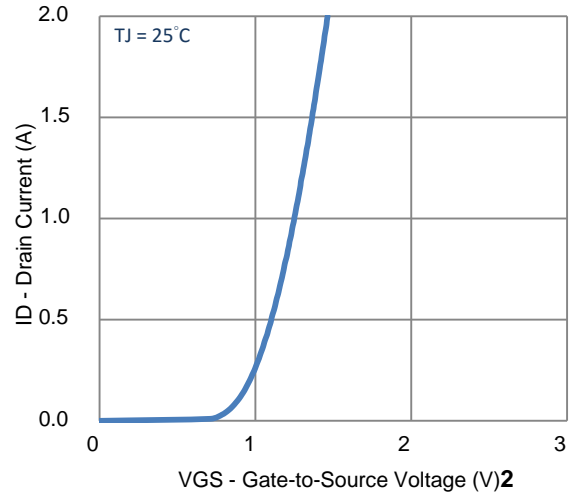


# N+P-CHANNEL MOSFET FOR SWITCHING RC1553

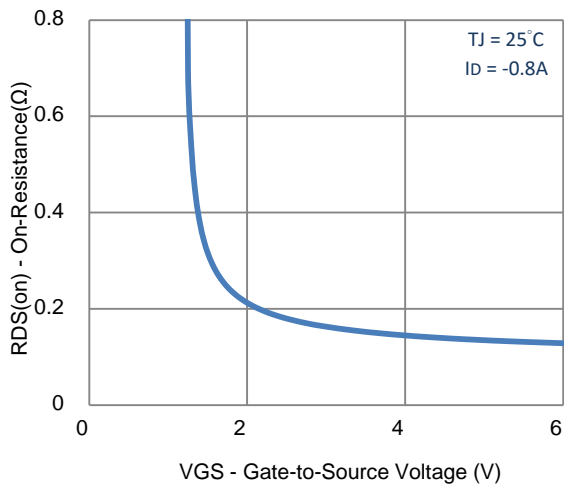
## Typical Electrical Characteristics - P-channel



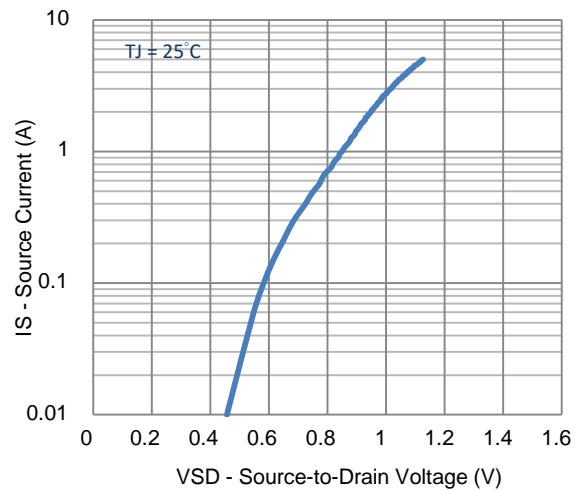
1. On-Resistance vs. Drain Current



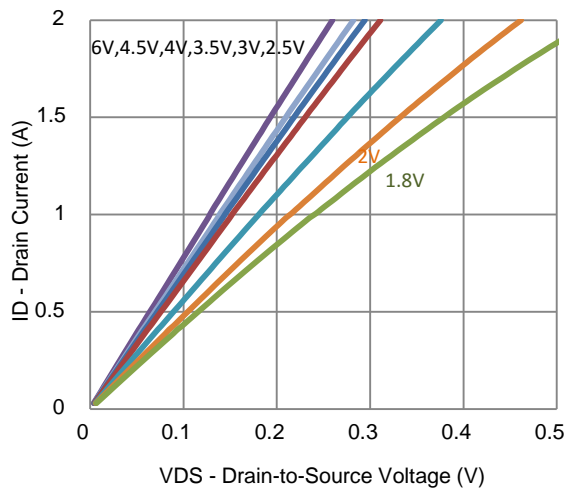
2. Transfer Characteristics



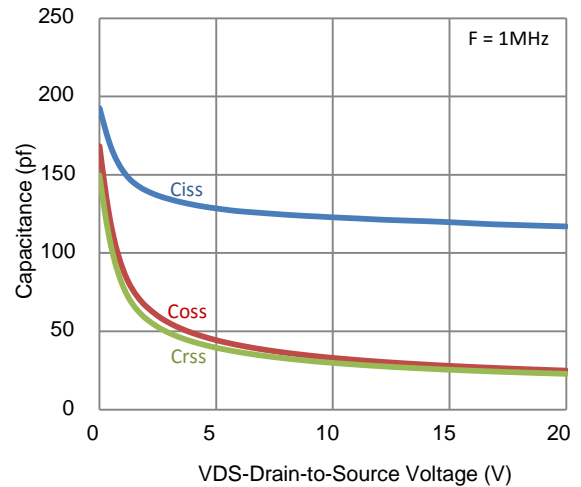
3. On-Resistance vs. Gate-to-Source Voltage



4. Drain-to-Source Forward Voltage



5. Output Characteristics

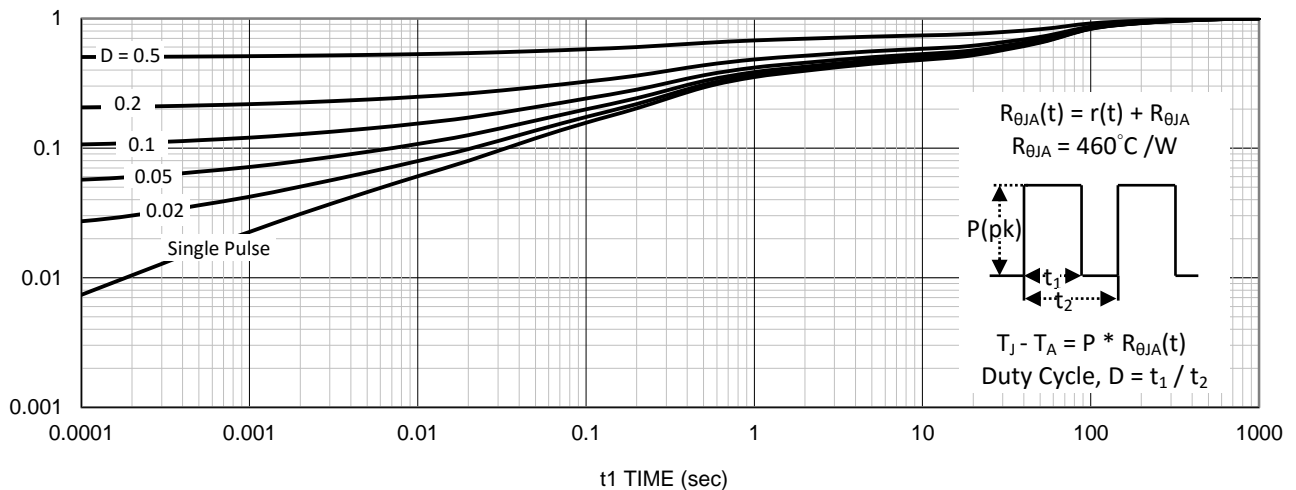
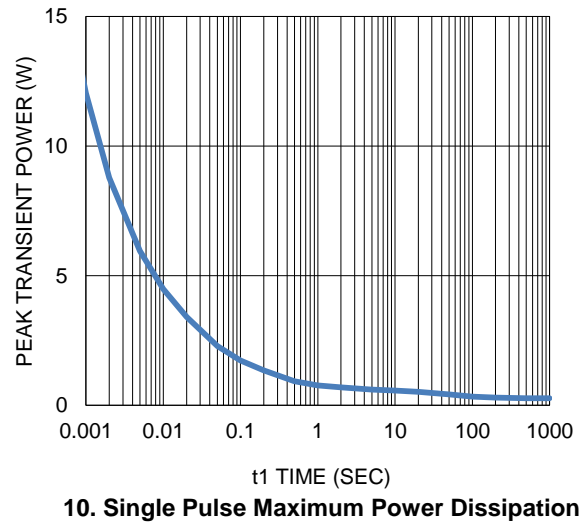
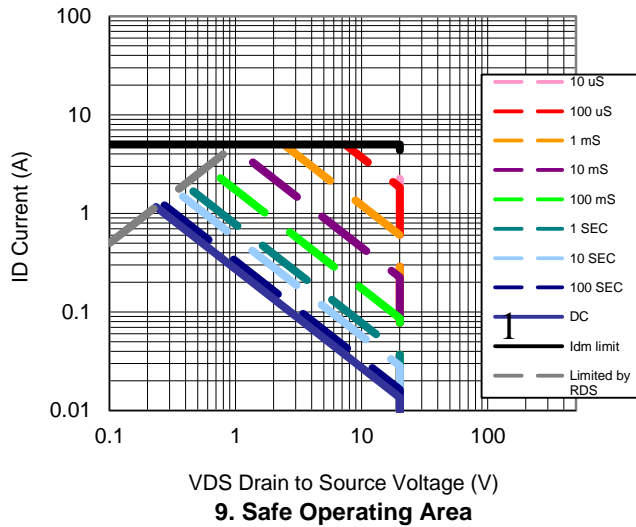
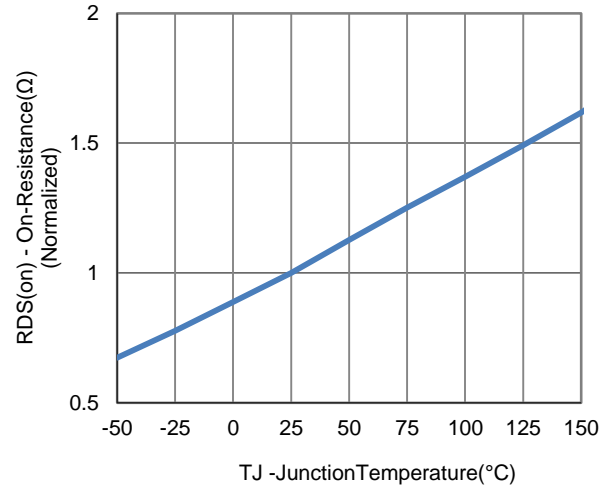
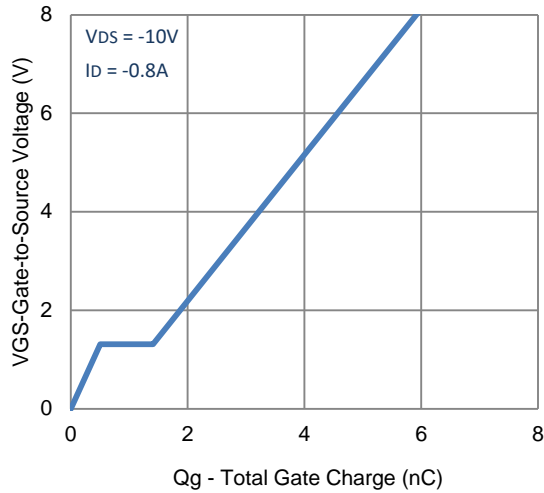


6. Capacitance

# N+P-CHANNEL MOSFET FOR SWITCHING

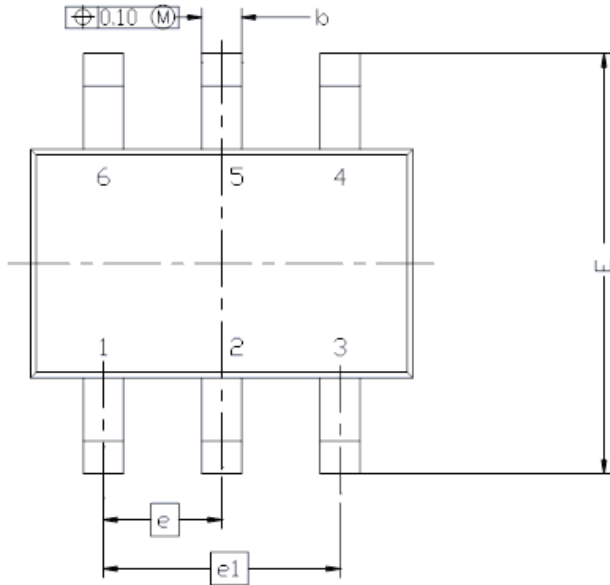
## RC1553

### Typical Electrical Characteristics - P-channel



# N+P-CHANNEL MOSFET FOR SWITCHING RC1553

## Package Information



DIM.	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.900	0.95	1.10	0.035	0.037	0.043
A1	0.00	---	0.10	0.000	---	0.004
A2	0.70	0.90	1.00	0.028	0.035	0.039
b	0.15	0.22	0.30	0.006	0.016	0.012
c	0.08	0.127	0.20	0.003	0.005	0.008
D	2.10 BSC			0.083 BSC		
E	2.30 BSC			0.091 BSC		
E1	1.30 BSC			0.051 BSC		
e	0.65 BSC			0.026 BSC		
e1	1.30 BSC			0.051 BSC		
L	0.26	0.40	0.46	0.010	0.015	0.018
L2	0.254BSC			0.010BSC		
R	0.10	---	---	0.004	---	---
θ	0°	4°	8°	0°	4°	8°
θ1	7°NOM			7°NOM		

