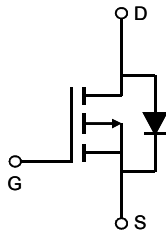


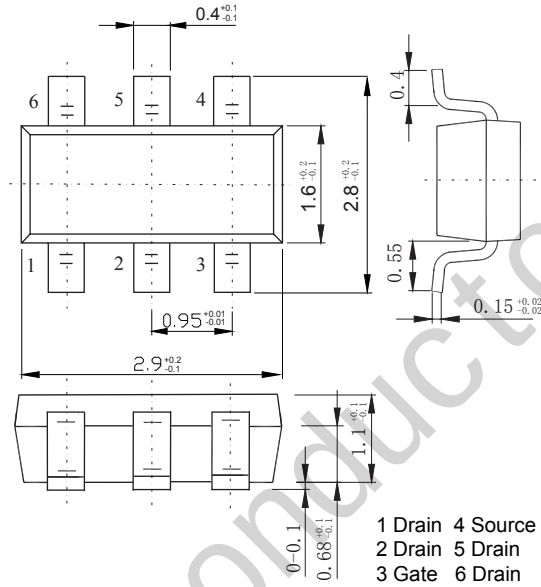
■ Features

- $V_{DS} (V) = -30V$
- $I_D = -5 A$ ($V_{GS} = -10V$)
- $R_{DS(ON)} < 47m\Omega$ ($V_{GS} = -10V$)
- $R_{DS(ON)} < 64m\Omega$ ($V_{GS} = -4.5V$)
- $R_{DS(ON)} < 85m\Omega$ ($V_{GS} = -2.5V$)



SOT-163 (SOT-23-6)

Unit: mm



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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DS}	-30	V
Gate-Source Voltage		V _{GS}	± 12	
Continuous Drain Current	T _A =25°C	I _D	-5	A
	T _A =70°C		-4	
Pulsed Drain Current		I _{DM}	-28	
Power Dissipation	T _A =25°C	P _D	2	W
	T _A =70°C		1.3	
Thermal Resistance.Junction- to-Ambient	t ≤ 10s	R _{thJA}	62.5	°C/W
	Steady-State		110	
Thermal Resistance.Junction- to-Lead		R _{thJL}	50	
Junction Temperature		T _J	150	°C
Junction 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_{DS}	$I_D = -250 \mu A, V_{GS} = 0V$	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30V, V_{GS} = 0V$			-1	μA
		$V_{DS} = -30V, V_{GS} = 0V, T_J = 55^\circ C$			-5	
Gate-Body leakage current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 12V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250 \mu A$	-0.5		-1.3	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -5A$			47	m Ω
		$V_{GS} = -10V, I_D = -5A, T_J = 125^\circ C$			74	
		$V_{GS} = -4.5V, I_D = -4A$			64	
		$V_{GS} = -2.5V, I_D = -1A$			85	
On state drain current	$I_{D(on)}$	$V_{GS} = -10V, V_{DS} = -5V$	-28			A
Forward Transconductance	g_{FS}	$V_{DS} = -5V, I_D = -5A$		18		S
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = -15V, f = 1MHz$		645	780	pF
Output Capacitance	C_{oss}			80		
Reverse Transfer Capacitance	C_{rss}			55	80	
Gate resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$	4		12	Ω
Total Gate Charge (10V)	Q_g	$V_{GS} = -10V, V_{DS} = -15V, I_D = -5A$		14	17	nC
Total Gate Charge (4.5V)				7	8.5	
Gate Source Charge				1.5		
Gate Drain Charge				2.5		
Turn-On DelayTime	$t_{d(on)}$	$V_{GS} = -10V, V_{DS} = -15V, R_L = 3\Omega, R_{GEN} = 3\Omega$		6.5		ns
Turn-On Rise Time	t_r			3.5		
Turn-Off DelayTime	$t_{d(off)}$			41		
Turn-Off Fall Time	t_f			9		
Body Diode Reverse Recovery Time	t_{rr}	$I_F = -5A, di/dt = 100A/\mu s$		11	13.5	nC
Body Diode Reverse Recovery Charge	Q_{rr}			3.5		
Maximum Body-Diode Continuous Current	I_S				-2.5	A
Diode Forward Voltage	V_{SD}	$I_S = -1A, V_{GS} = 0V$			-1	V

* The static characteristics in Figures 1 to 6 are obtained using <300us pulses, duty cycle 0.5% max.

■ Typical Characteristics

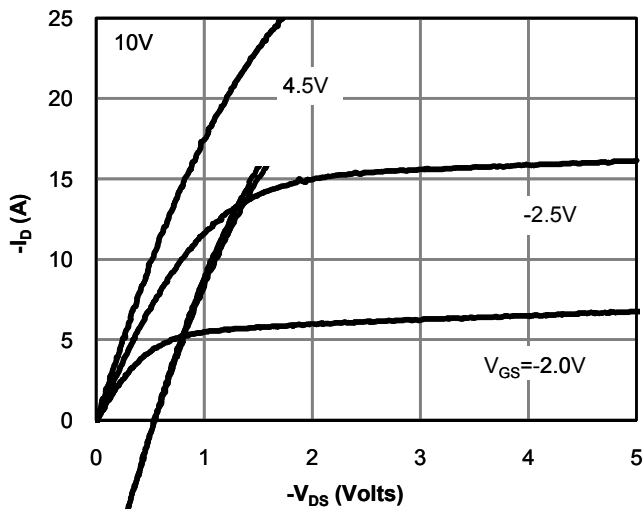


Fig 1: On-Region Characteristics (Note E)

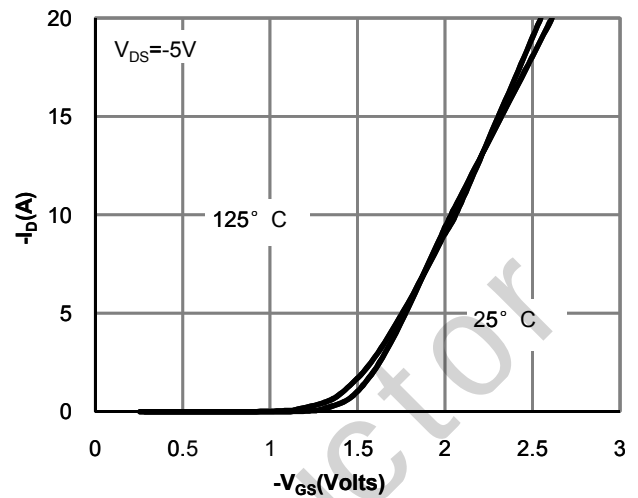


Figure 2: Transfer Characteristics (Note E)

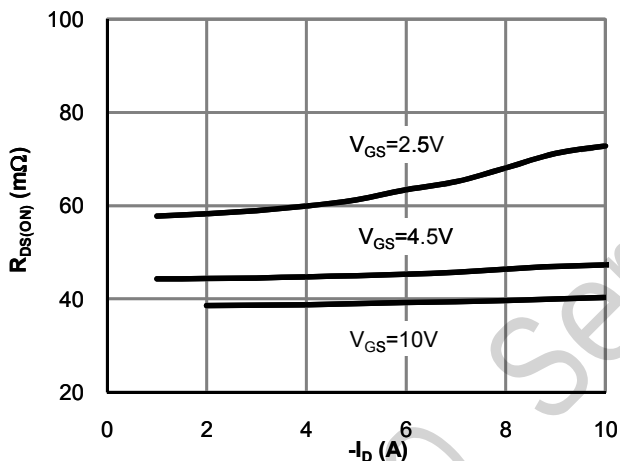


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

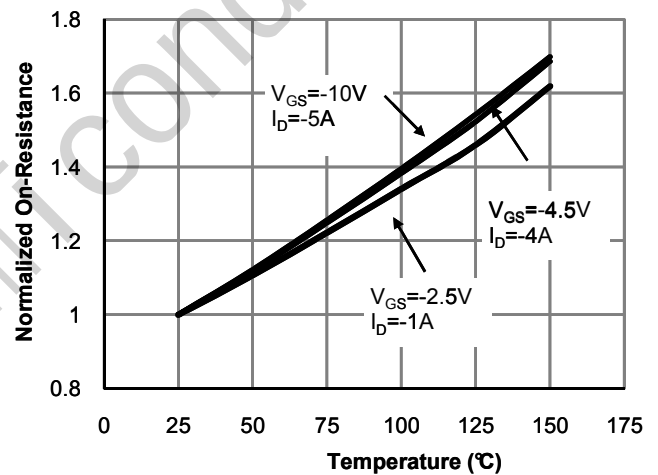


Figure 4: On-Resistance vs. Junction Temperature (Note E)

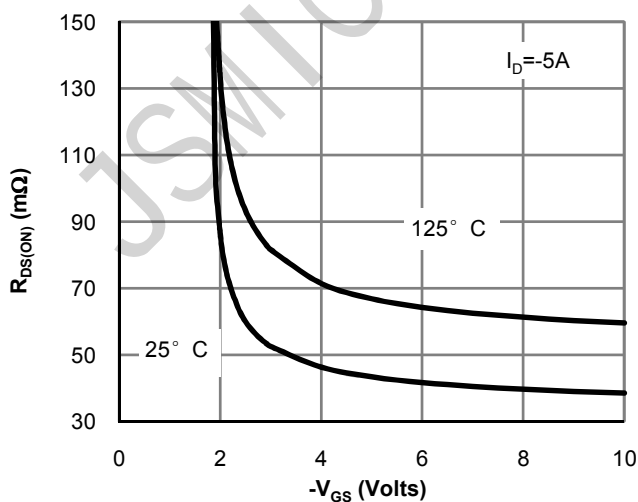


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

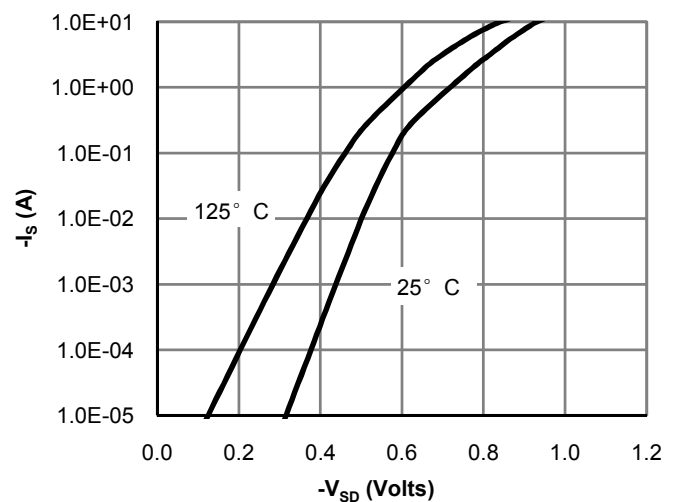


Figure 6: Body-Diode Characteristics (Note E)

Typical Characteristics

