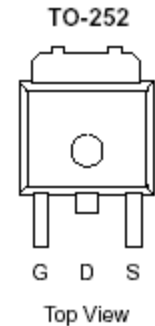
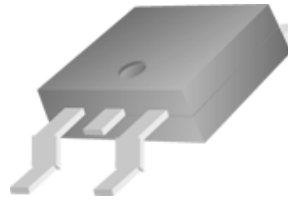


P-Channel 30-V (D-S) MOSFET

These miniature surface mount MOSFETs utilize High Cell Density process. Low $r_{DS(on)}$ assures minimal power loss and conserves energy, making this device ideal for use in power management circuitry. Typical applications are PWMDC-DC converters, power management in portable and battery-powered products such as computers, printers, battery charger, telecommunication power system, and telephones power system.

- Low $r_{DS(on)}$ Provides Higher Efficiency and Extends Battery Life
- Miniature TO-252 Surface Mount Package Saves Board Space
- High power and current handling capability
- Extended VGS range (± 25) for battery pack applications



PRODUCT SUMMARY		
V_{DS} (V)	$r_{DS(on)}$ m(Ω)	I_D (A)
-26.5	59 @ $V_{GS} = -4.5V$	24
	95 @ $V_{GS} = -2.5V$	19

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V_{DS}	-26.5	V
Gate-Source Voltage	V_{GS}	± 12	
Continuous Drain Current ^a	$T_A=25^\circ C$ I_D	24	A
Pulsed Drain Current ^b	I_{DM}	± 40	
Continuous Source Current (Diode Conduction) ^a	I_S	-30	A
Power Dissipation ^a	$T_A=25^\circ C$ P_D	50	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 175	$^\circ C$

THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Maximum	Units
Maximum Junction-to-Ambient ^a	$R_{\theta JA}$	50	$^\circ C/W$
Maximum Junction-to-Case	$R_{\theta JC}$	3.0	$^\circ C/W$

Notes

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

SPECIFICATIONS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
Static						
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250 \mu\text{A}$	-1			
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 12 \text{ V}$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -21 \text{ V}, V_{GS} = 0 \text{ V}$			-1	uA
		$V_{DS} = -21 \text{ V}, V_{GS} = 0 \text{ V}, T_J = 55^\circ\text{C}$			-5	
On-State Drain Current ^A	$I_{D(on)}$	$V_{DS} = -5 \text{ V}, V_{GS} = -10 \text{ V}$	-41			A
Drain-Source On-Resistance ^A	$r_{DS(on)}$	$V_{GS} = -4.5 \text{ V}, I_D = -24 \text{ A}$			59	m Ω
		$V_{GS} = -2.5 \text{ V}, I_D = -19 \text{ A}$			95	
Forward Transconductance ^A	g_{fs}	$V_{DS} = -15 \text{ V}, I_D = -24 \text{ A}$		31		S
Diode Forward Voltage	V_{SD}	$I_S = -41 \text{ A}, V_{GS} = 0 \text{ V}$		-0.7		V
Dynamic^b						
Total Gate Charge	Q_g	$V_{DS} = -15 \text{ V}, V_{GS} = -4.5 \text{ V},$ $I_D = -24 \text{ A}$		25.0		nC
Gate-Source Charge	Q_{gs}			2.4		
Gate-Drain Charge	Q_{gd}			3.9		
Switching						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -15 \text{ V}, R_L = 15 \Omega, I_D = -24$ $\text{A}, V_{GEN} = -10 \text{ V}, R_G = 6\Omega$		10		nS
Rise Time	t_r			2.8		
Turn-Off Delay Time	$t_{d(off)}$			53.6		
Fall-Time	t_f			46		

Notes

- Pulse test: $PW \leq 300\mu\text{s}$ duty cycle $\leq 2\%$.
- Guaranteed by design, not subject to production testing.

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Typical Electrical Characteristics

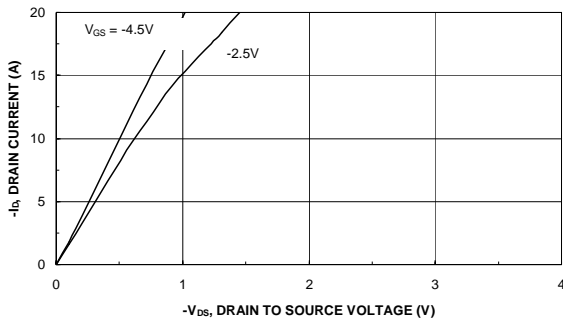


Figure 1. Output Characteristics

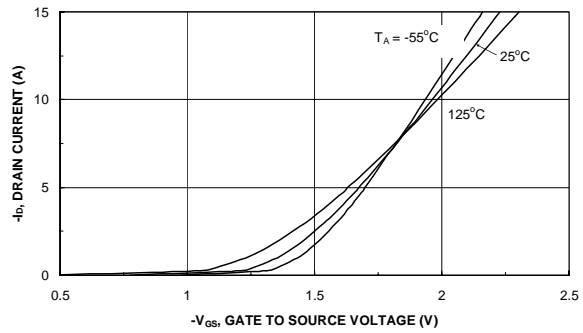


Figure 2. Transfer Characteristics

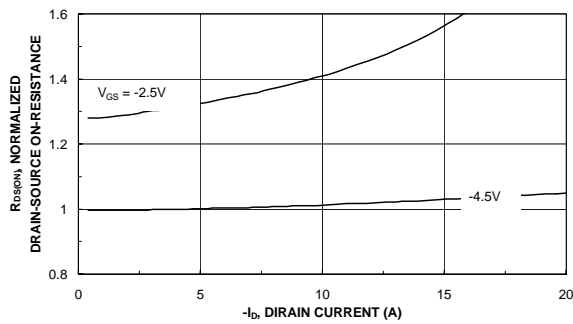


Figure 3. On-Resistance vs. Drain Current

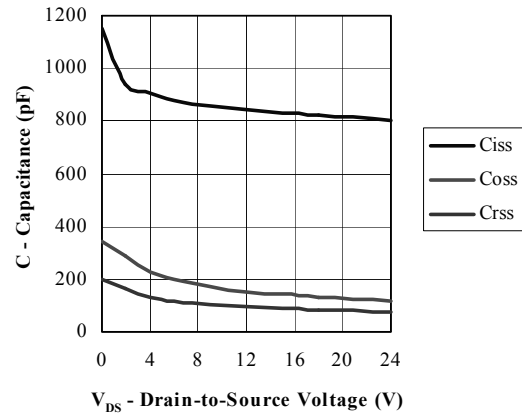


Figure 4. Capacitance

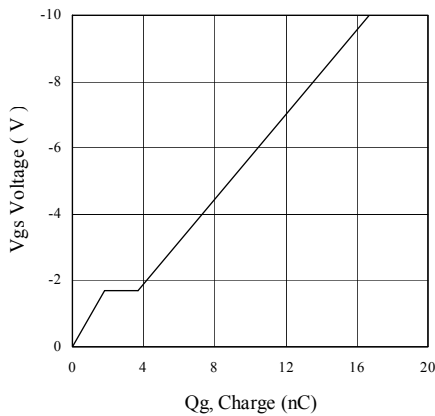


Figure 5. Gate Charge

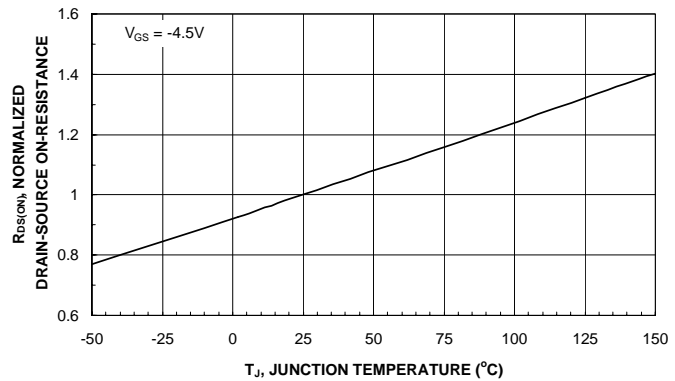


Figure 6. On-Resistance vs. Junction Temperature

Typical Electrical Characteristics

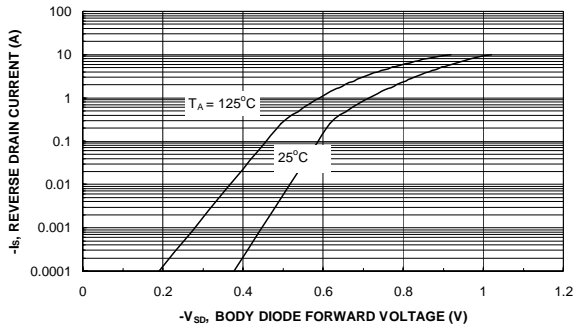


Figure 7. Source-Drain Diode Forward Voltage

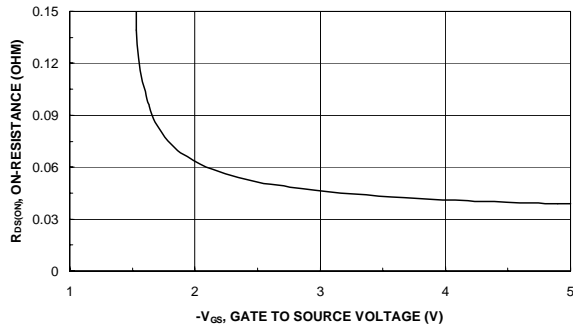


Figure 8. On-Resistance with Gate to Source Voltage

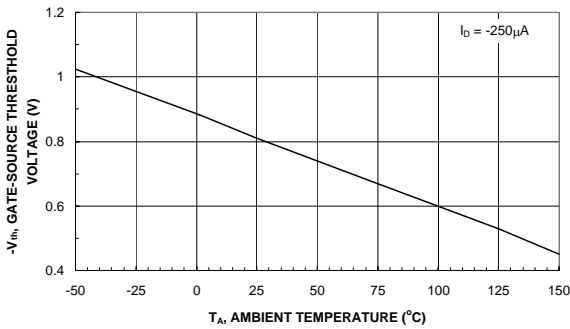


Figure 9. Vth Gate to Source Voltage Vs Temperature

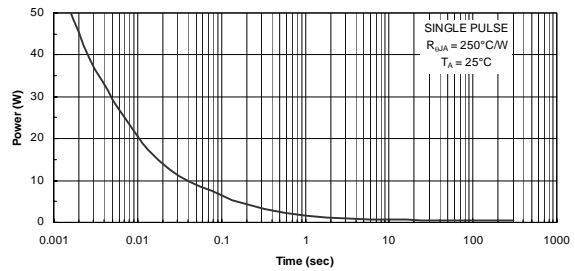


Figure 10. Single Pulse Maximum Power Dissipation

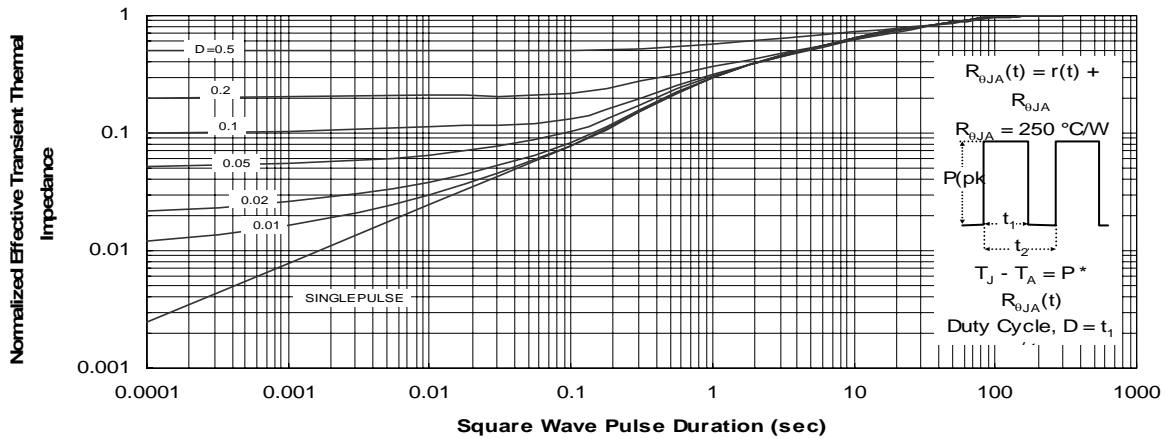


Figure 11. Transient Thermal Response Curve

