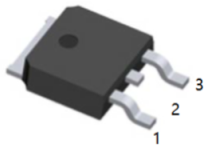
Features

- V_{DS}(V) = 30V
- I_D = 35A (V_{GS}= 10V)
- $R_{DS(ON)}$ <3.9mΩ (V_{GS} = 10V)
- $R_{DS(ON)}$ <4.4mΩ (V_{GS} = 4.5V)
- Low Miller Charge
- Low Q_{RR}Body Diode
- UIS Capability (Single Pulse and Repetitive Pulse)

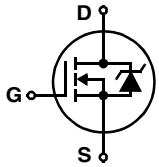


1.G 2.D 3.S

TO-252(DPAK) top view

Applications

- 12V Automotive Load Control
- Starter / Alternator Systems
- Electronic Power Steering Systems
- ABS
- DC-DC Converters



MOSFET Maximum Ratings T_C = 25°C unless otherwise noted

Symbol	Parameter	Ratings	Units
V_{DSS}	Drain to Source Voltage	30	V
V_{GS}	Gate to Source Voltage	±20	V
I_D	Drain Current Continuous (T_C < 168°C, V_{GS} = 10V)	35	A
	Continuous (T_C < 167°C, V_{GS} = 4.5V)	35	A
	Continuous (T_{amb} = 25°C, V_{GS} = 10V, with $R_{\theta JA}$ = 52°C/W)	21	A
	Pulsed	Figure 4	A
E_{AS}	Single Pulse Avalanche Energy (Note 1)	690	mJ
P_D	Power dissipation	160	W
	Derate above 25°C	1.07	W/°C
T_J, T_{STG}	Operating and Storage Temperature	-55 to 175	°C

Thermal Characteristics

$R_{\theta JC}$	Thermal Resistance Junction to Case TO-252	0.94	°C/W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient TO-252	100	°C/W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient TO-252, 1in^2 copper pad area	52	°C/W

Electrical Characteristics T_C = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
B_{VDSS}	Drain to Source Breakdown Voltage	I_D = 250μA, V_{GS} = 0V	30			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 25V			1	μA
I_{GSS}	Gate to Source Leakage Current	V_{GS} = ±20V			±100	nA
$V_{GS(TH)}$	Gate to Source Threshold Voltage	V_{GS} = V_{DS}, I_D = 250μA	1.2		2.5	V
$r_{DS(ON)}$	Drain to Source On Resistance	I_D = 35A, V_{GS} = 10V		3.2	3.9	mΩ
		I_D = 35A, V_{GS} = 4.5V		3.6	4.4	
C_{ISS}	Input Capacitance	V_{DS} = 15V, V_{GS} = 0V, f = 1MHz		5160		pF
C_{OSS}	Output Capacitance			990		pF
C_{RSS}	Reverse Transfer Capacitance			590		pF
R_G	Gate Resistance	V_{GS} = 0.5V, f = 1MHz		2.1		Ω
$Q_{g(TOT)}$	Total Gate Charge at 10V	V_{GS} = 0V to 10V; V_{DD} = 15V, I_D = 35A, I_g = 1.0mA		91	118	nC
$Q_{g(5)}$	Total Gate Charge at 5V	V_{GS} = 0V to 5V		48	62	nC
$Q_{g(TH)}$	Threshold Gate Charge	V_{GS} = 0V to 1V		5	6.5	nC
Q_{gs}	Gate to Source Gate Charge			14		nC
Q_{gs2}	Gate Charge Threshold to Plateau			9		nC
Q_{gd}	Gate to Drain “Miller” Charge			18		nC
t_{ON}	Turn-On Time	V_{DD} = 15V, I_D = 35A, V_{GS} = 4.5V, R_{GS} = 3.3Ω			261	ns
$t_{d(ON)}$	Turn-On Delay Time			20		ns
t_r	Rise Time			154		ns
$t_{d(OFF)}$	Turn-Off Delay Time			42		ns
t_f	Fall Time			63		ns
t_{OFF}	Turn-Off Time				158	ns
V_{SD}	Source to Drain Diode Voltage	I_{SD} = 35A			1.25	V
		I_{SD} = 15A			1.0	V
t_{rr}	Reverse Recovery Time	I_{SD} = 35A, dI_{SD}/dt = 100A/μs			37	ns
Q_{RR}	Reverse Recovered Charge	I_{SD} = 35A, dI_{SD}/dt = 100A/μs			21	nC

Notes:
1: Starting T_J = 25°C, L = 1.77mH, I_{AS} = 28A.

Typical Characteristics T_C = 25°C unless otherwise noted

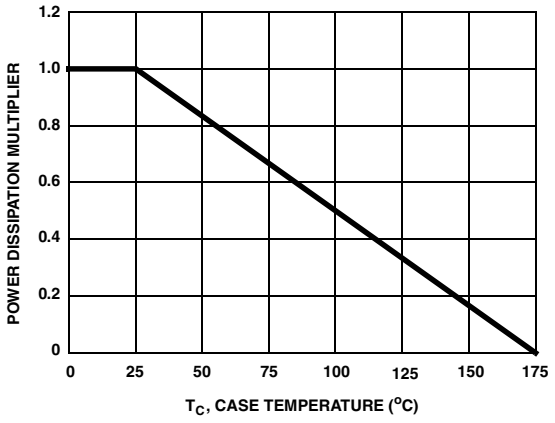


Figure 1. Normalized Power Dissipation vs Ambient Temperature

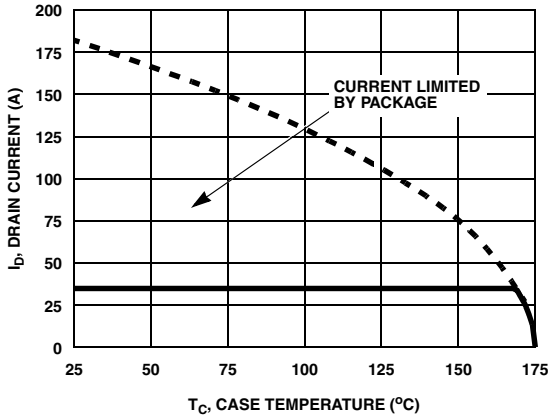


Figure 2. Maximum Continuous Drain Current vs Case Temperature

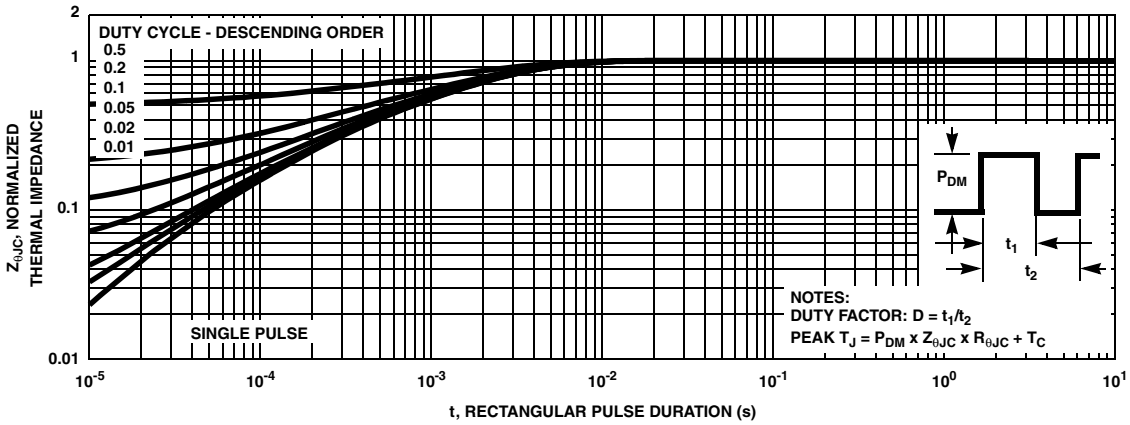


Figure 3. Normalized Maximum Transient Thermal Impedance

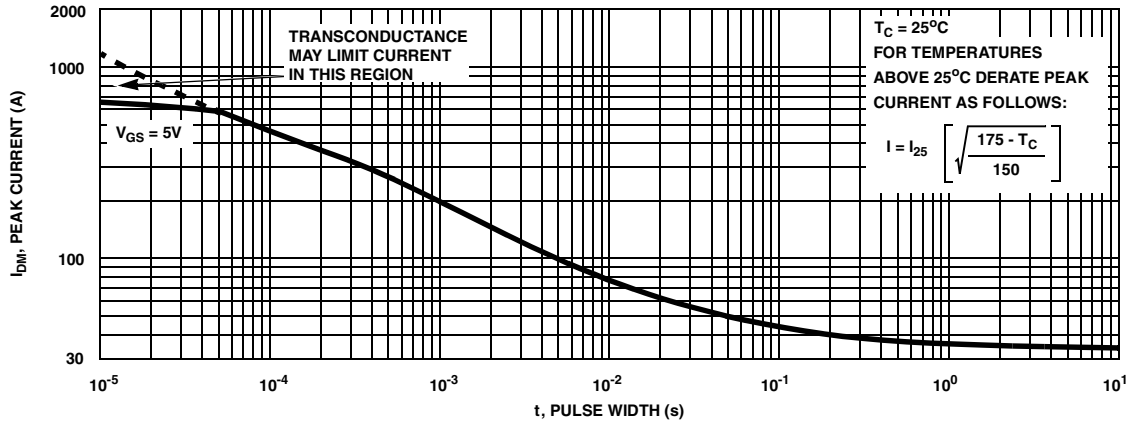


Figure 4. Peak Current Capability

Typical Characteristics T_C = 25°C unless otherwise noted

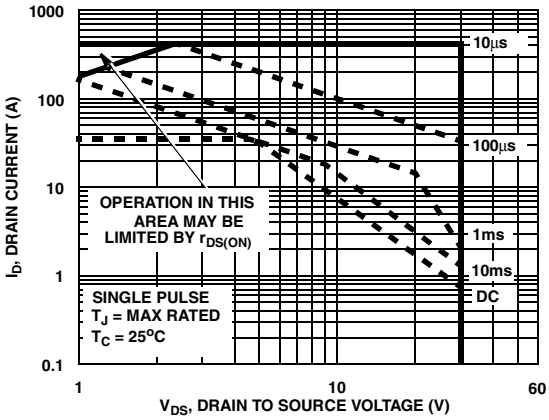
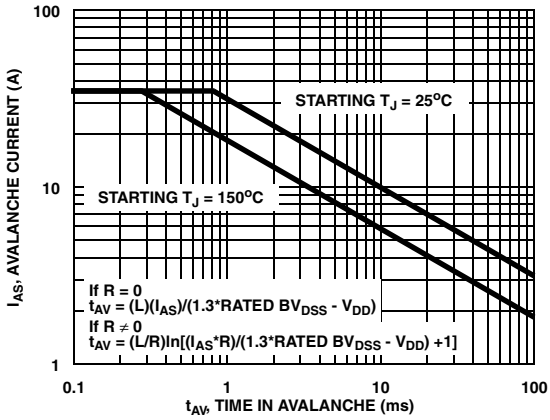


Figure 5. Forward Bias Safe Operating Area



NOTE: Refer to Fairchild Application Notes AN7514 and AN7515

Figure 6. Unclamped Inductive Switching Capability

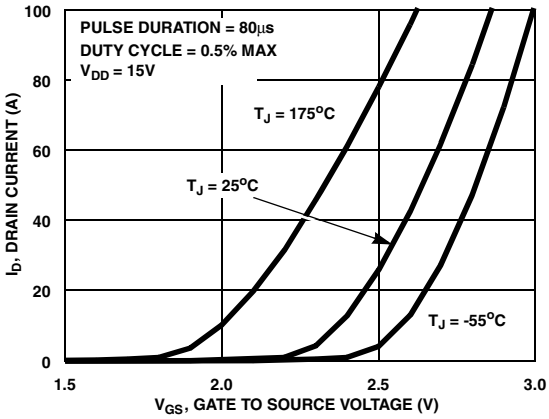


Figure 7. Transfer Characteristics

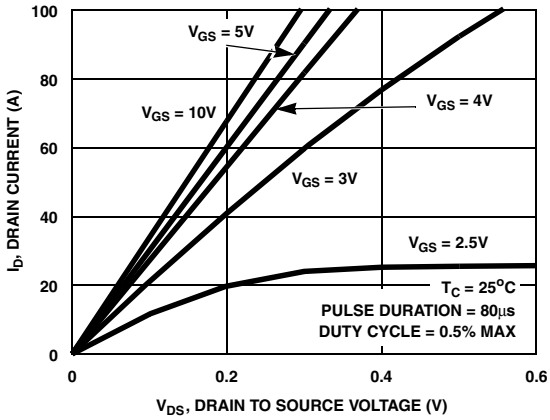


Figure 8. Saturation Characteristics

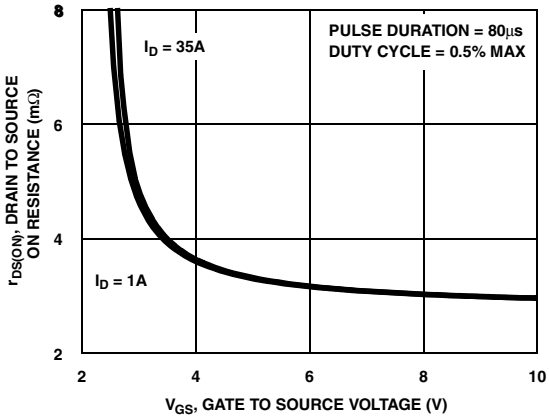


Figure 9. Drain to Source On Resistance vs Gate Voltage and Drain Current

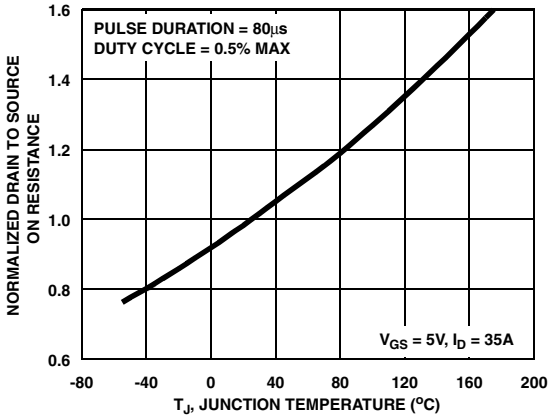


Figure 10. Normalized Drain to Source On Resistance vs Junction Temperature

Typical Characteristics T_C = 25°C unless otherwise noted

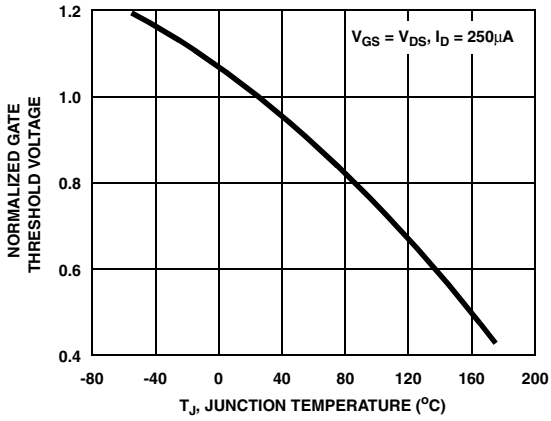


Figure 11. Normalized Gate Threshold Voltage vs Junction Temperature

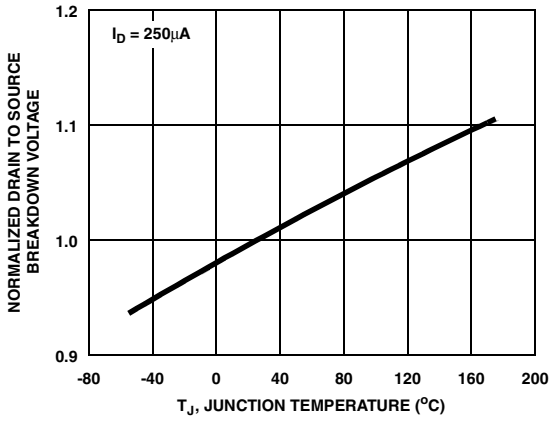


Figure 12. Normalized Drain to Source Breakdown Voltage vs Junction Temperature

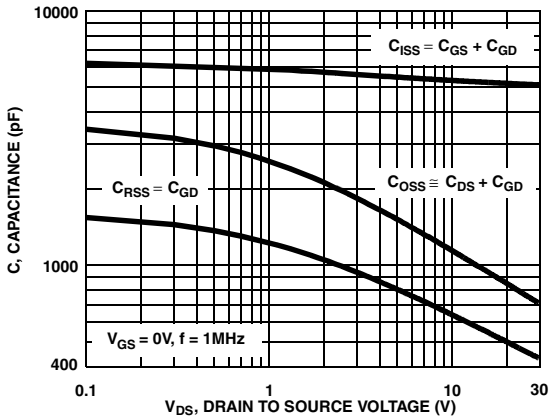


Figure 13. Capacitance vs Drain to Source Voltage

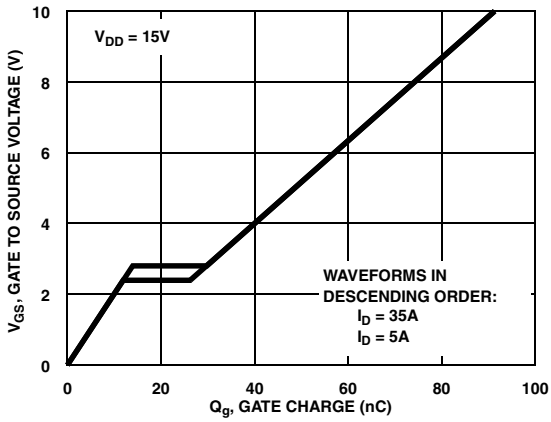
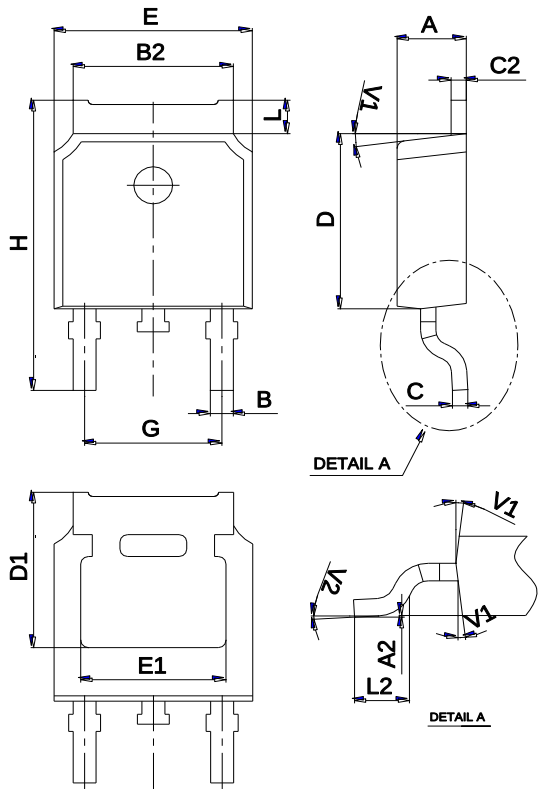


Figure 14. Gate Charge Waveforms for Constant Gate Current

Package Mechanical Data TO-252



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
E1	4.63			0.182		
G	4.47		4.67	0.176		0.184
H	9.50		10.70	0.374		0.421
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1		7°			7°	
V2	0°		6°	0°		6°

Marking

Ordering information

Order code	Package	Baseqty	Deliverymode
UMW FDD044AN03L	TO-252	2500	Tape and reel

单击下面可查看定价，库存，交付和生命周期等信息

>>UMW(友台半导体)