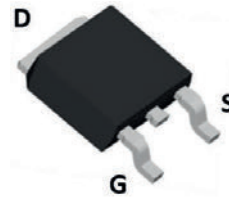
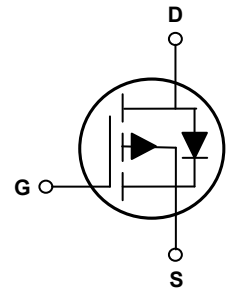


Main Product Characteristics

V_{DS}	-60V
$R_{DS(ON)}$	35m Ω (max.)
I_D	-36A



TO-252 (DPAK)



Schematic Diagram

Features and Benefits

- Advanced MOSFET process technology
- Ideal for high efficiency switched mode power supplies
- Low on-resistance with low gate charge
- Fast switching and reverse body recovery



Description

The SSFD6035 utilizes the latest techniques to achieve high cell density and low on-resistance. These features make this device extremely efficient and reliable for use in high efficiency switch mode power supplies and a wide variety of other applications.

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Max.	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous (T _C =25°C)	I_D	-36	A
Drain Current-Continuous (T _C =70°C)		-25	
Drain Current-Pulsed ¹	I_{DM}	-144	A
Maximum Power Dissipation	P_D	79	W
Thermal Resistance, Junction-to-Case ²	$R_{\theta JC}$	1.9	°C/W
Operating Junction Temperature Range	T_J	-55 To +175	°C
Storage Temperature Range	T_{STG}	-55 To +175	°C

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
On / Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-60	-	-	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=-60V, V_{GS}=0V$	-	-	-1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Static Drain-Source On-Resistance ³	$R_{DS(ON)}$	$V_{GS}=-10V, I_D=-20A$	-	26	35	m Ω
		$V_{GS}=-4.5V, I_D=-10A$	-	32	45	
Gate Threshold Voltage ³	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=-250\mu A$	-1	-1.8	-2.5	V
Forward Transconductance ³	gfs	$V_{DS}=-5V, I_D=-15A$	-	35	-	S
Dynamic and Switching Characteristics						
Total Gate Charge ⁴	Q_g	$V_{DS}=-30V, I_D=-20A, V_{GS}=-10V$	-	68	-	nC
Gate-Source Charge ⁴	Q_{gs}		-	11	-	
Gate-Drain Charge ⁴	Q_{gd}		-	13	-	
Turn-On Delay Time ⁴	$t_{d(on)}$	$V_{DS}=-30V, R_{GEN}=3\Omega, V_{GS}=-10V, I_D=2A$	-	13	-	nS
Rise Time ⁴	t_r		-	10	-	
Turn-Off Delay Time ⁴	$t_{d(off)}$		-	64	-	
Fall Time ⁴	t_f		-	15	-	
Input Capacitance	C_{iss}	$V_{DS}=-25V, V_{GS}=0V, F=1\text{MHz}$	-	4020	-	pF
Output Capacitance	C_{oss}		-	134	-	
Reverse Transfer Capacitance	C_{rss}		-	99	-	
Source-Drain Ratings and Characteristics						
Continuous Source Current	I_{SD}	$V_{GS}=0V, I_S=-15A$	-	-	-36	A
Diode Forward Voltage ³	V_{SD}	$V_{GS}=0V, I_S=-15A$	-	-0.92	-1.2	V
Reverse Recovery Time	T_{rr}	$I_S=-20A, di/dt=100A/\mu s$	-	26	-	nS
Rever Recovery Charge	Q_{rr}		-	29	-	nC

Note:

1. Repetitive rating: pulse width limited by maximum junction temperature.
2. Surface mounted on 1in² FR4 board, $t \leq 10$ sec.
3. Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristic Curves

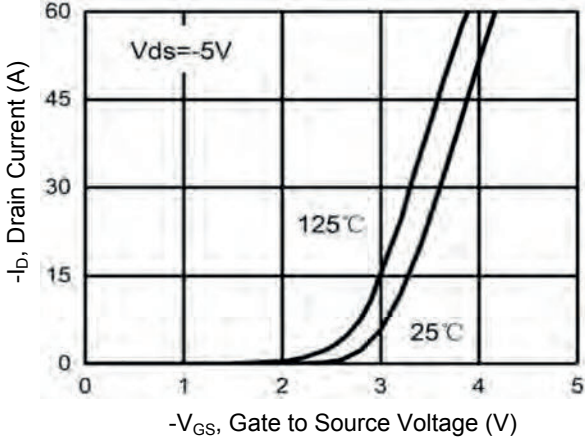


Figure 1. Transfer Characteristics

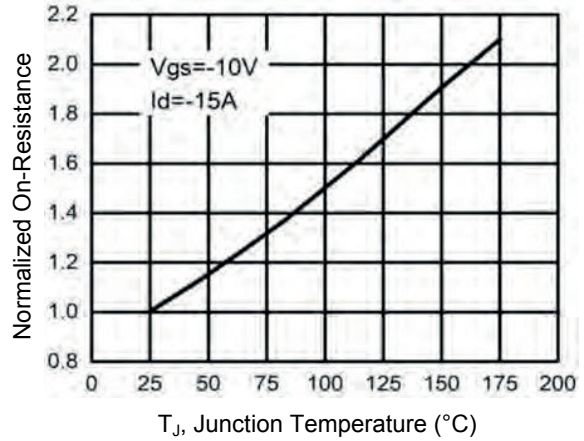


Figure 2. Drain to Source $R_{DS(ON)}$ vs. T_J

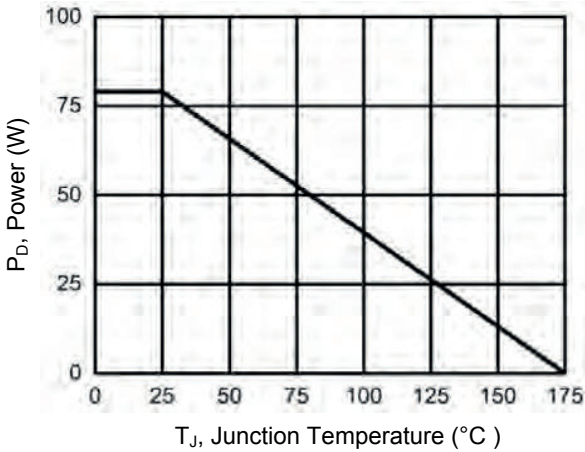


Figure 3. Power Dissipation

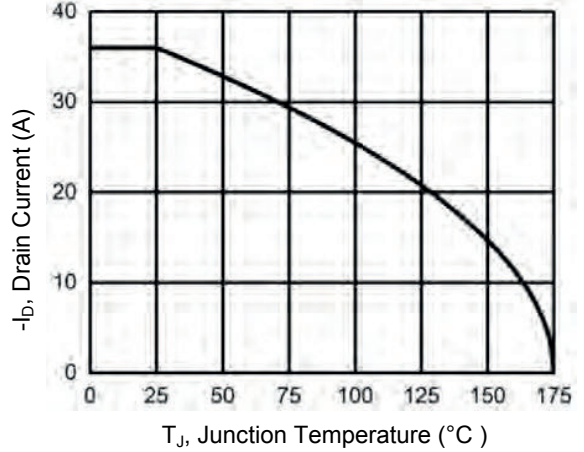


Figure 4. Drain Current vs. T_J

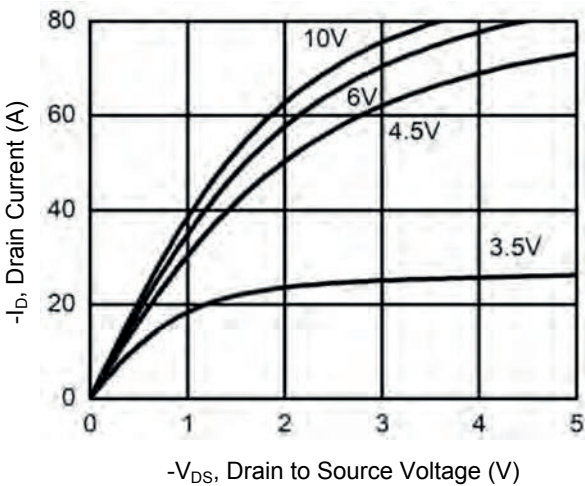


Figure 5. Output Characteristics

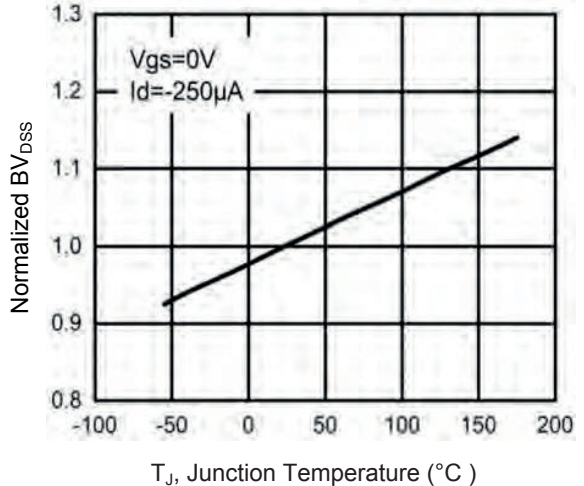


Figure 6. Drain to Source Voltage vs. T_J

Typical Electrical and Thermal Characteristic Curves

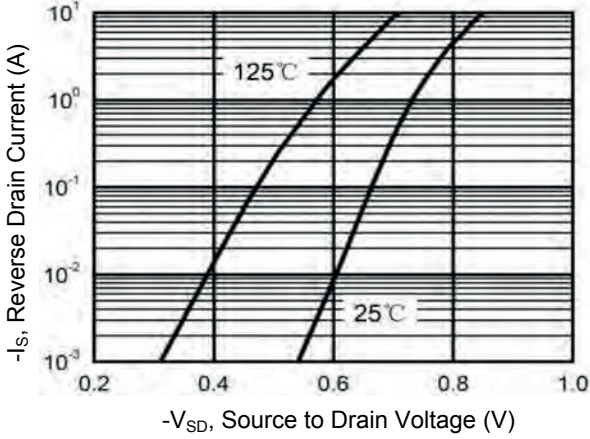


Figure 7. Source to Drain Diode Forward Voltage

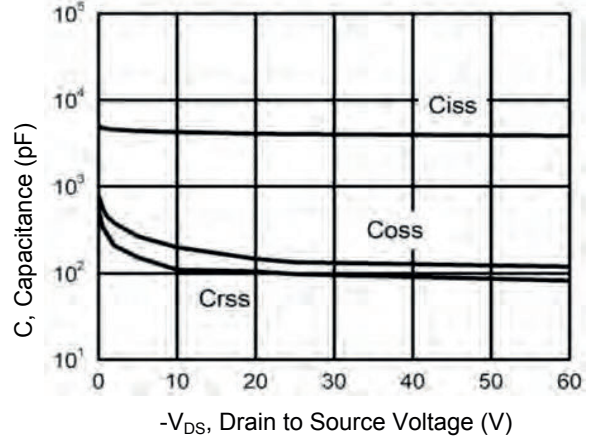


Figure 8. Capacitance vs. V_{DS}

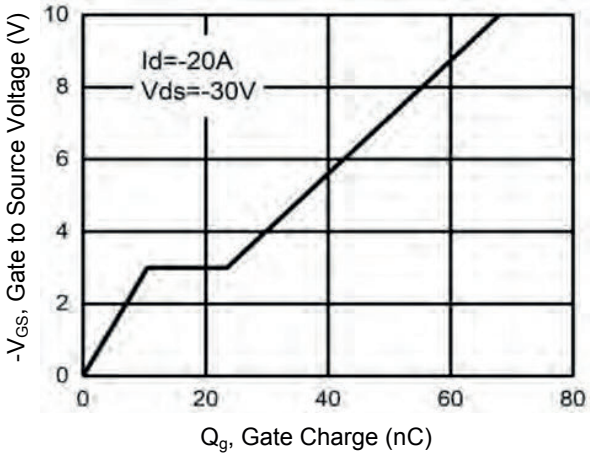


Figure 9. Gate Charge

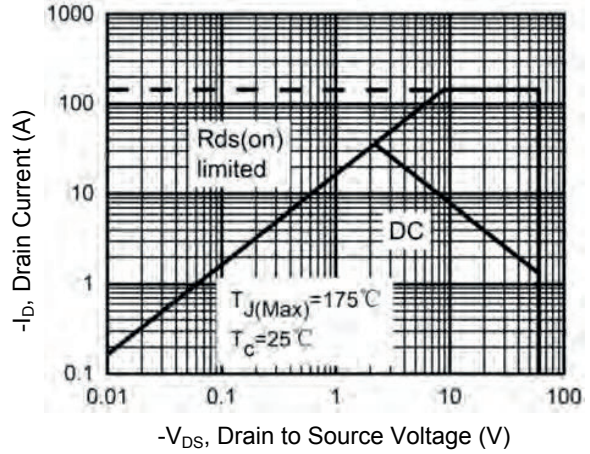
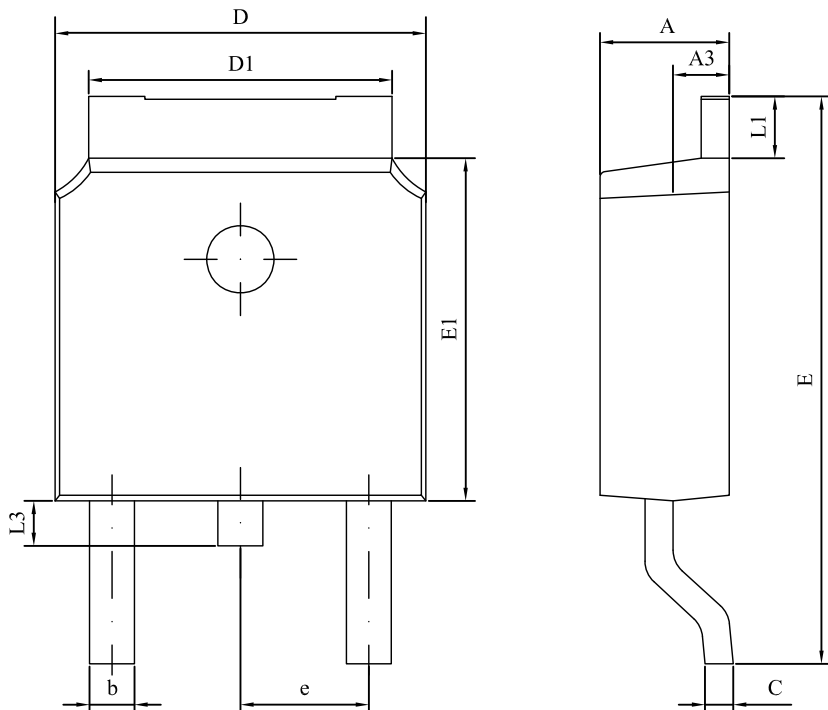


Figure 10. Safe Operation Area

Package Outline Dimensions (TO-252/DPAK)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.15	2.40	0.085	0.094
A3	0.90	1.10	0.035	0.043
b	0.50	0.90	0.020	0.035
C	0.40	0.65	0.016	0.026
D	6.30	6.90	0.248	0.272
D1	4.95	5.50	0.195	0.217
E	9.40	10.41	0.370	0.410
E1	5.90	6.30	0.232	0.248
e	2.286 BSC		0.090 BSC	
L1	0.89	1.27	0.035	0.050
L3	0.60	1.10	0.024	0.043

Order Information

Device	Package	Marking	Carrier	Quantity
SSFD6035	TO-252 (DPAK)	SSFD6035	Tape & Reel	2,500 pcs / Reel

For more information, please contact us at: inquiry@goodarksemi.com