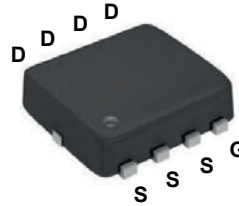
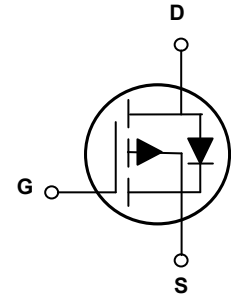


Main Product Characteristics

BV_{DSS}	-60V
$R_{DS(ON)}$	35mΩ (Max.)
I_D	-36A



PPAK3x3



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
- AEC-Q101 qualified



Description

The GSFN6035AU 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 (25°C)	I_D	-36	A
Drain Current-Continuous (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 =-250uA	-60	-	-	V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =-60V, V _{GS} =0V	-	-	-1	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Static Drain-Source On-Resistance ³	R _{DS(ON)}	V _{GS} =-10V, I _D =-20A	-	26	35	mΩ
		V _{GS} =-4.5V, I _D =-10A	-	32	45	
Gate Threshold Voltage ³	V _{GS(th)}	V _{GS} =V _{DS} , I _D =-250uA	-1	-1.8	-2.5	V
Forward Transconductance ³	g _{fs}	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} =3Ω, 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=1MHz	-	4020	-	pF
Output Capacitance	C _{oss}		-	134	-	
Reverse Transfer Capacitance	C _{rss}		-	99	-	
Drain-Source Diode Characteristics and Maximum Ratings						
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/μs	-	26	-	ns
Rever Recovery Charge	Q _{rr}		-	29	-	nC

Notes:

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

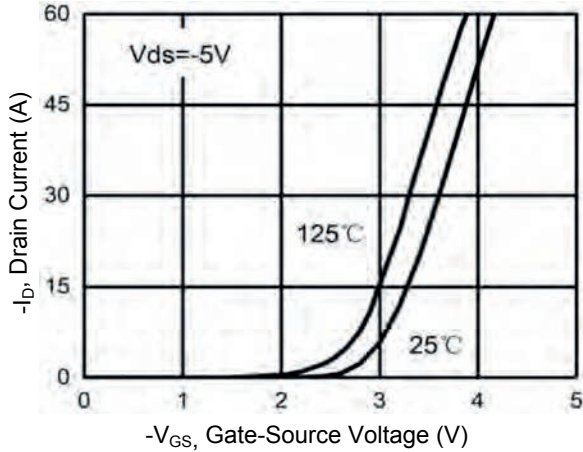


Figure 1. Transfer Characteristics

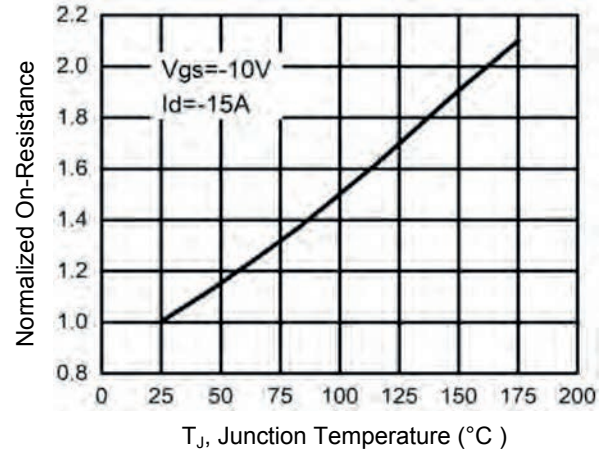


Figure 2. Drain-Source On-Resistance vs. T_J

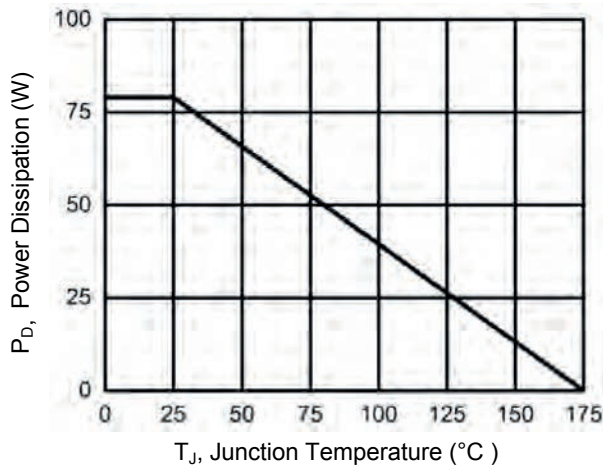


Figure 3. Power Dissipation

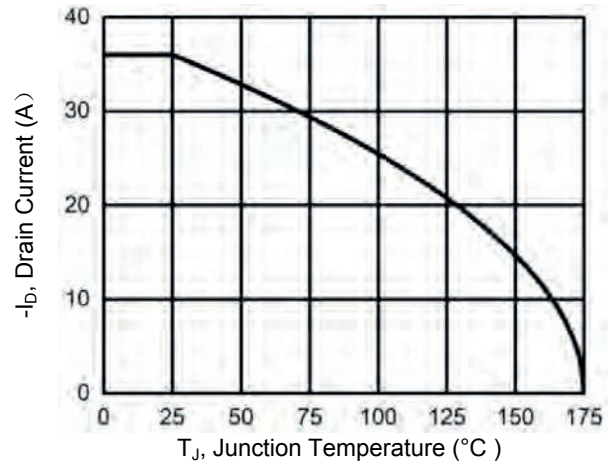


Figure 4. Drain Current vs. T_J

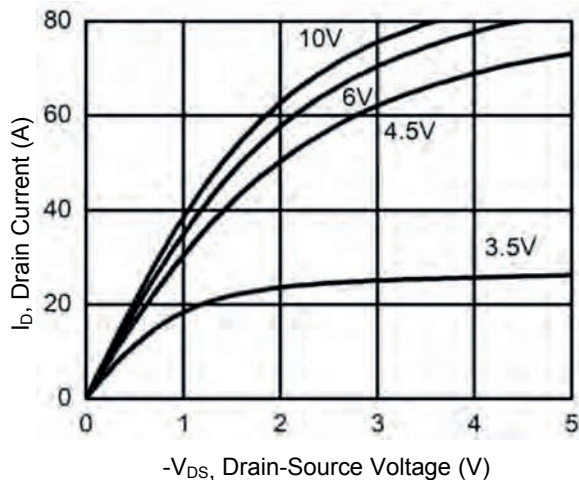


Figure 5. Output Characteristics

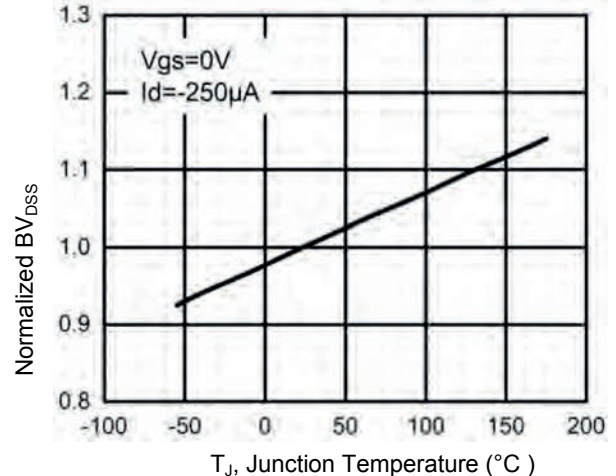


Figure 6. Drain-Source Voltage vs. T_J

Typical Electrical and Thermal Characteristic Curves

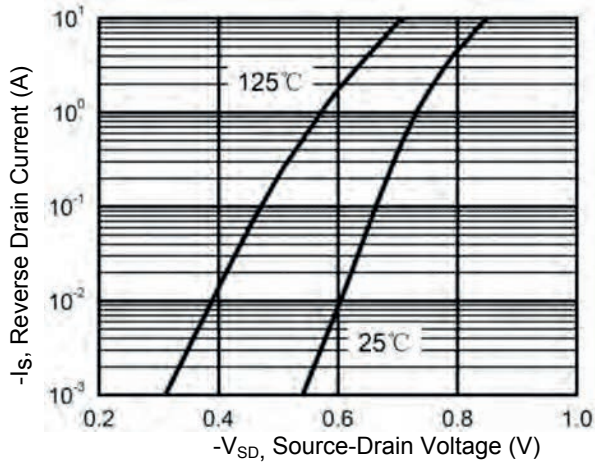


Figure 7. Source - Drain Diode Forward Voltage

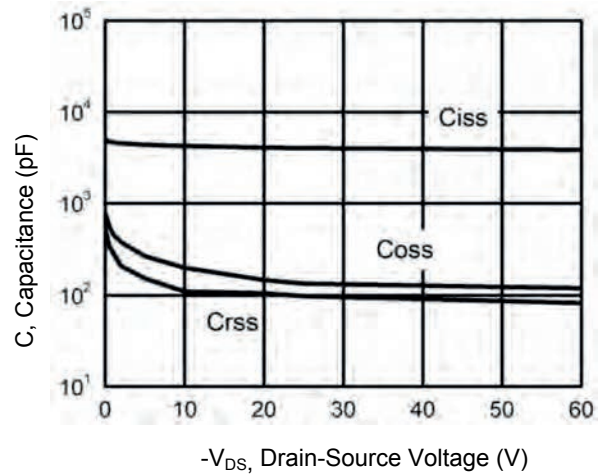


Figure 8. Capacitance vs. V_{DS}

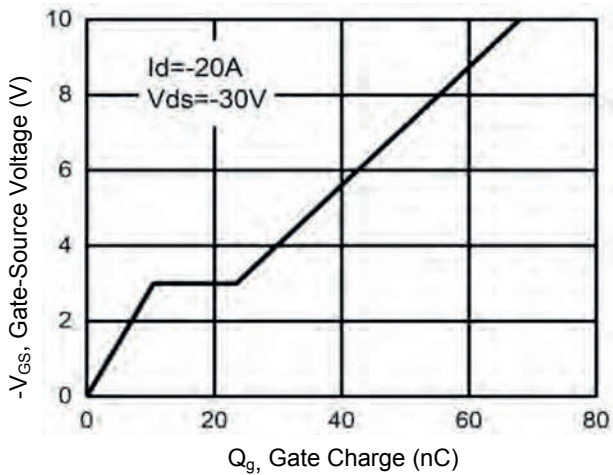


Figure 9. Gate Charge

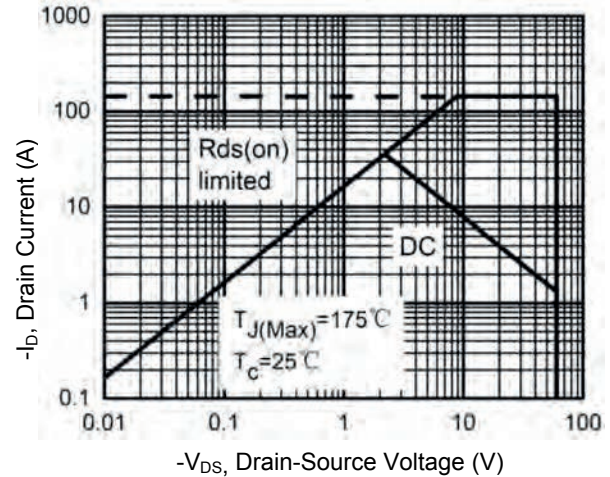
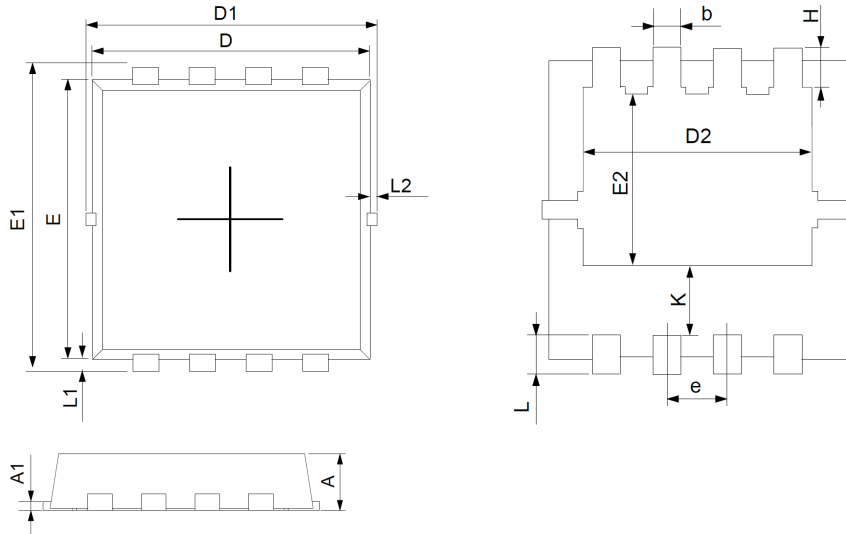


Figure 10. Safe Operation Area

Package Outline Dimensions (PPAK3x3)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.70	0.90	0.028	0.035
A1	0.14	0.20	0.006	0.008
D	3.05	3.25	0.120	0.128
E	2.90	3.10	0.114	0.122
D1	3.10	3.50	0.122	0.138
D2	2.35	2.50	0.093	0.098
E1	3.10	3.50	0.122	0.138
E2	1.64	1.84	0.065	0.072
b	0.25	0.35	0.010	0.014
k	0.59	0.79	0.023	0.031
e	0.55	0.75	0.022	0.030
E4	3.34	3.92	0.131	0.154
L	0.25	0.55	0.010	0.022
L1	0.10	0.20	0.004	0.008
H	0.32	0.52	0.013	0.020

Order Information

Device	Package	Marking	Carrier	Quantity
GSFN6035AU	PPAK3x3	N6035	Tape & Reel	5,000pcs / Reel