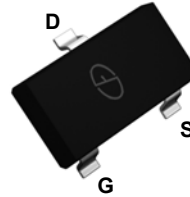
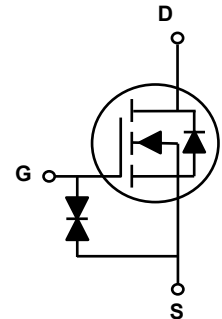


Main Product Characteristics

BV_{DSS}	60V
$R_{DS(ON)}$	3.0Ω (Max.)
I_D	0.36A



SOT-23



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 SSF72KAU 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 supply and a wide variety of other applications.

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous @ Current-Pulsed ($T_A=25^{\circ}\text{C}$) ¹	I_D	0.36	A
Drain Current-Continuous @ Current-Pulsed ($T_A=70^{\circ}\text{C}$) ¹		0.31	
Pulsed Drain Current ¹	I_{DM}	0.8	A
Maximum Power Dissipation	P_D	0.43	W
Thermal Resistance, Junction-to-Ambient ²	$R_{\theta JA}$	350	$^{\circ}\text{C/W}$
Operating Junction and Storage Temperature Range	T_J/T_{STG}	-55 To +150	$^{\circ}\text{C}$

Electrical Characteristics (T_A=25°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 =250μA	60	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±5V, V _{DS} =0V	-	-	100	nA
		V _{GS} =±10V, V _{DS} =0V	-	-	150	nA
		V _{GS} =±20V, V _{DS} =0V	-	-	10	μA
Gate-Source Breakdown Voltage	BV _{GSO}	V _{DS} =0V, I _G =±250μA	±20	-	-	V
Gate Threshold Voltage ³	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	-	2.5	V
Drain-Source On-State Resistance ³	R _{DS(on)}	V _{GS} =10V, I _D =0.5A	-	-	3	Ω
		V _{GS} =5V, I _D =0.05A	-	-	3.5	
Forward Transconductance ³	g _{fs}	V _{DS} =10V, I _D =0.2A	0.08	-	-	S
Dynamic and Switching Characteristics						
Input Capacitance ⁴	C _{iss}	V _{DS} =25V, V _{GS} =0V, F=1.0MHz	-	30	-	pF
Output Capacitance ⁴	C _{oss}		-	6	-	
Reverse Transfer Capacitance ⁴	C _{rss}		-	3	-	
Turn-on Delay Time ⁴	t _{d(on)}	V _{DD} =30V, V _{GS} =10V, R _{GEN} =10Ω, R _L =150Ω, I _D =0.2A	-	-	25	nS
Turn-Off Delay Time ⁴	t _{d(off)}		-	-	35	
Total Gate Charge ⁴	Q _g	V _{DS} =10V, I _D =0.25A, V _{GS} =4.5V	-	0.4	0.6	nC
Source-Drain Ratings and Characteristics						
Diode Forward Voltage ³	V _{SD}	V _{GS} =0V, I _S =0.2A	-	-	1.3	V

Notes:

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

Typical Electrical and Thermal Characteristic Curves

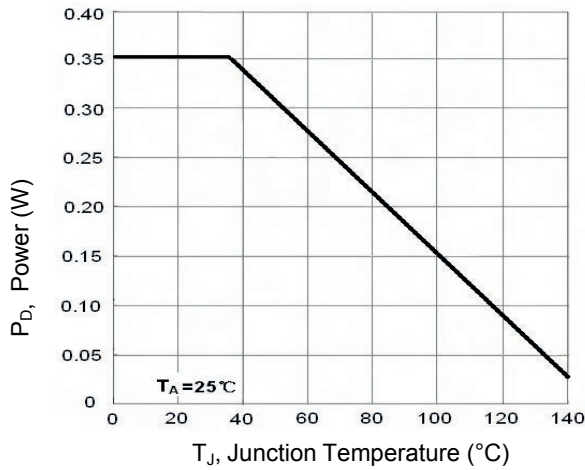


Figure 1. Power Dissipation

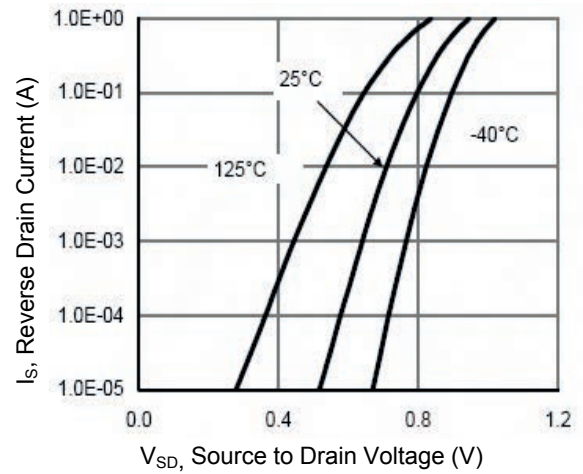


Figure 2. Source to Drain Diode Forward

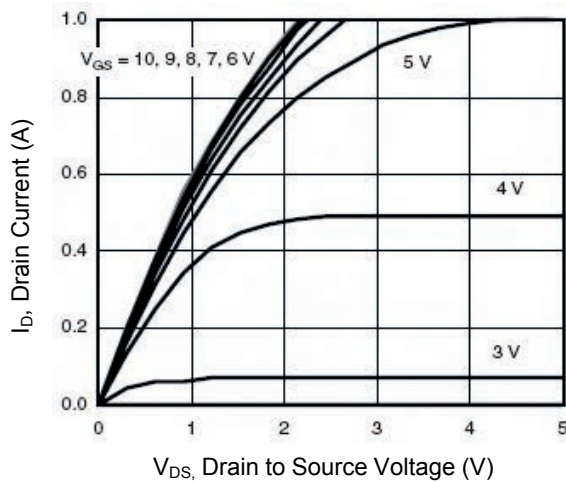


Figure 3. Output Characteristics

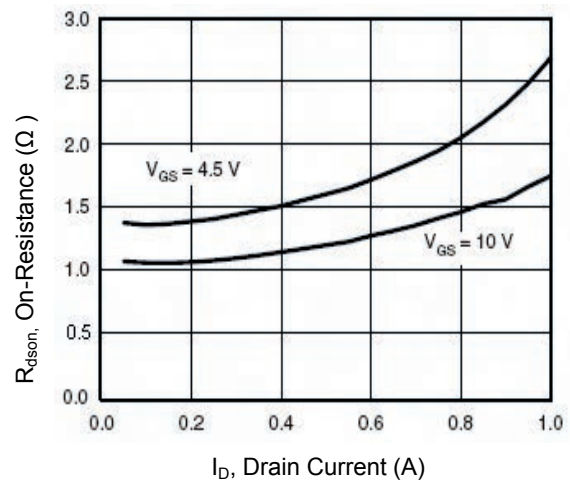


Figure 4. Drain-Source On-Resistance

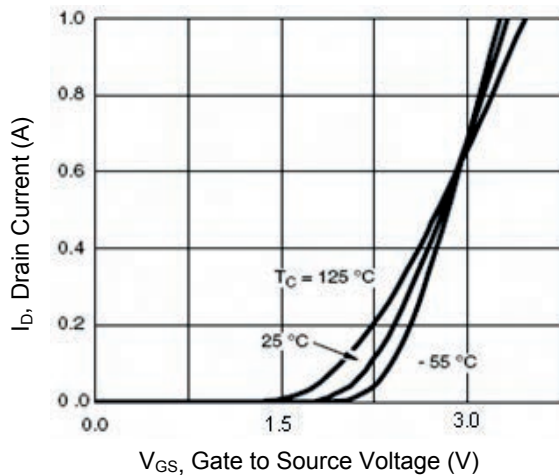


Figure 5. Transfer Characteristics

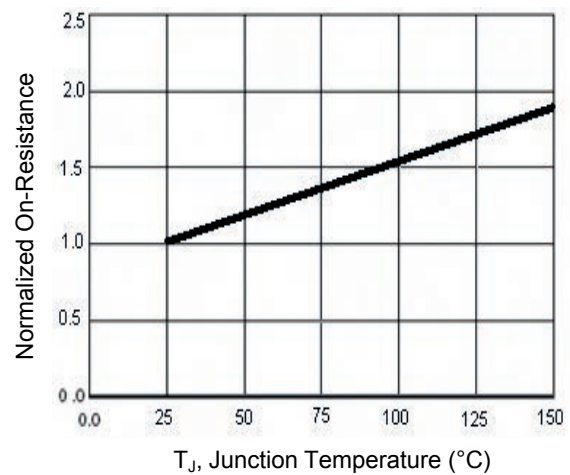


Figure 6. Drain-Source On-Resistance

Typical Electrical and Thermal Characteristic Curves

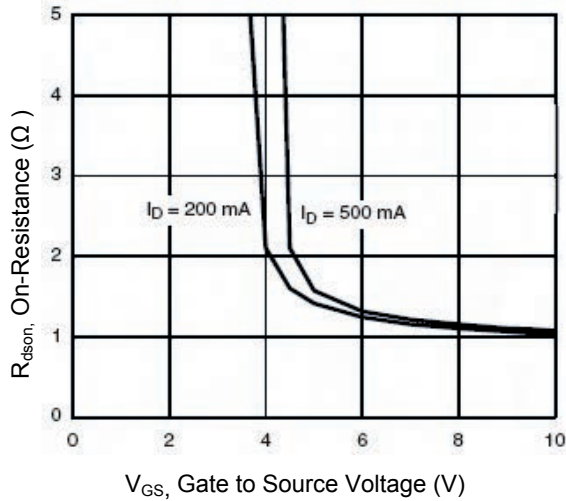


Figure 7. $R_{DS(on)}$ vs. V_{GS}

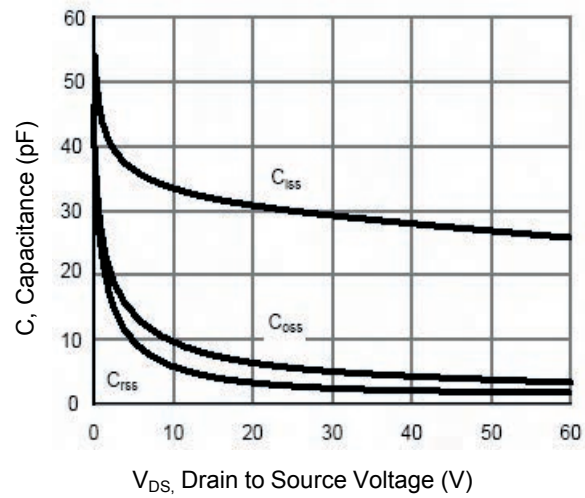


Figure 8. Capacitance vs. V_{DS}

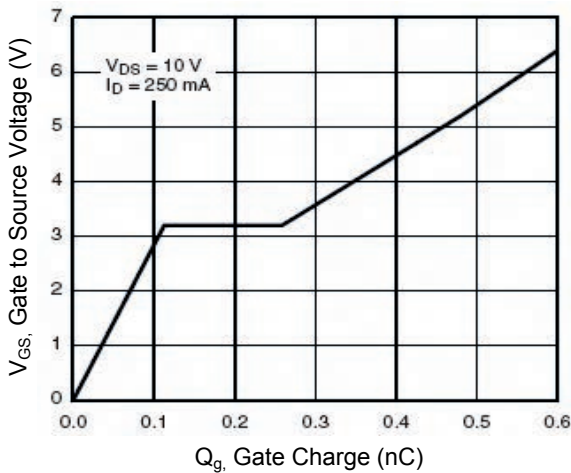


Figure 9. Gate Charge

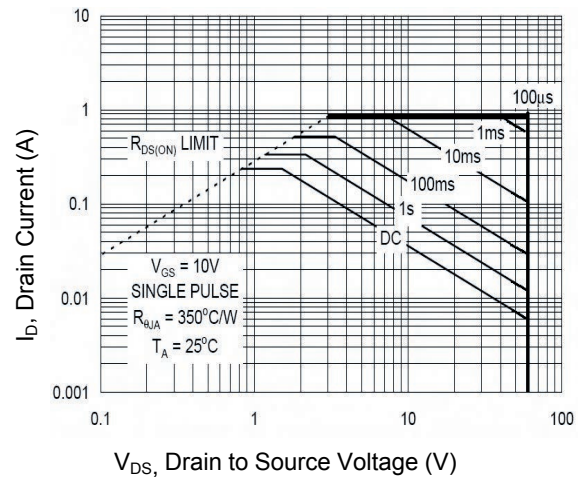


Figure 10. Safe Operation Area

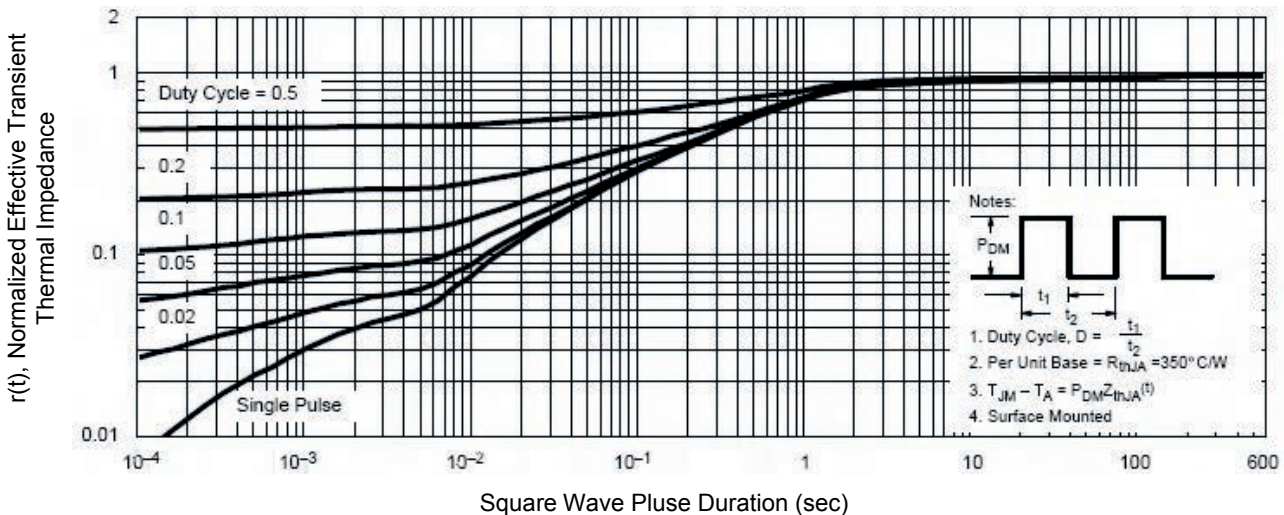
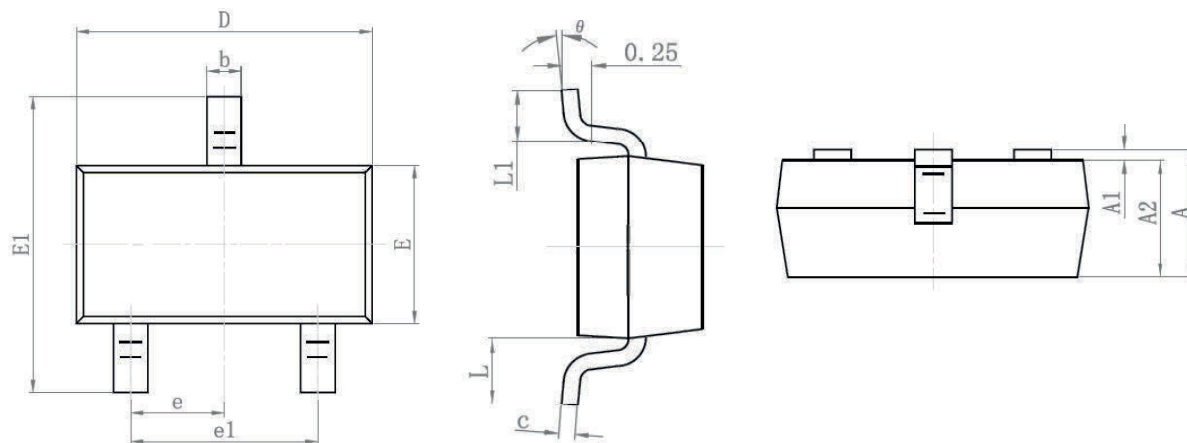


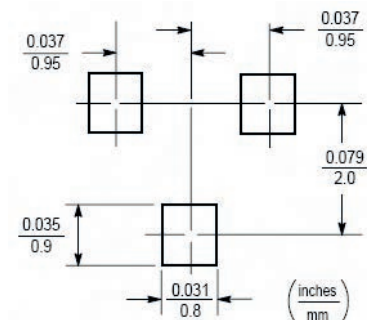
Figure 11. Normalized Maximum Transient Thermal Impedance

Package Outline Dimensions (SOT-23)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Recommended Pad Layout



Order Information

Device	Package	Marking	Quantity	Carrier
SSF72KAU	SOT-23	2KAU	3,000pcs / Reel	Tape & Reel

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