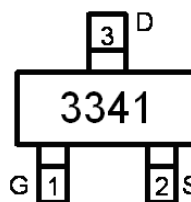


Main Product Characteristics:

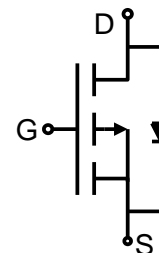
V_{DSS}	-30V
$R_{DS(on)}$	39 (typ.)
I_D	-4.2A



SOT-23



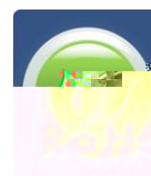
Marking and Pin Assignments



Schematic Diagram

Features and Benefits:

- Advanced MOSFET process technology
- Special designed for PWM, load switching and general purpose applications
- Ultra low on-resistance with low gate charge
- Fast switching and reverse body recovery
- 150 operating temperature
- Add HF for Halogen Free



Description:

It utilizes the latest processing techniques to achieve the high cell density and reduces the on-resistance with high repetitive avalanche rating. These features combine to make this design an extremely efficient and reliable device for use in power switching application and a wide variety of other applications.

Absolute Max Rating: @ $T_A=25$ unless otherwise specified

Symbol	Parameter	Max.	Units
I_D @ TC = 25°C	Continuous Drain Current, V_{GS} @ 10V	-4.2	A
I_D @ TC = 70°C	Continuous Drain Current, V_{GS} @ 10V	-3.5	
I_{DM}	Pulsed Drain Current	-30	
P_D @TC = 25°C	Power Dissipation	1.4	W
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-to-Source Voltage	±12	V
T_J T_{STG}	Operating Junction and Storage Temperature Range	-55 to +150	°C

Thermal Resistance

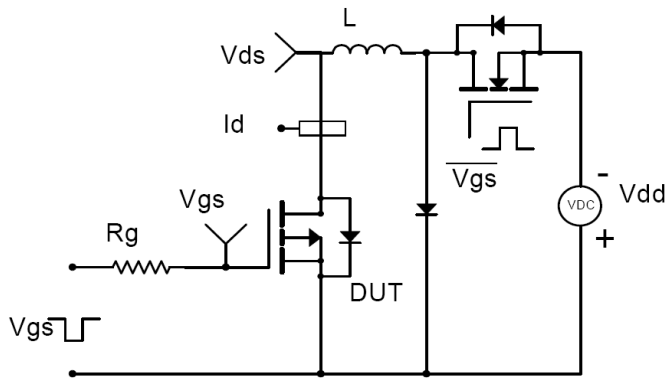
Symbol	Characterizes	Typ.	Max.	Units
R_A	Junction-to-		90	°C /W

Electrical Characterizes @ $T_A=25$ unless otherwise specified cA

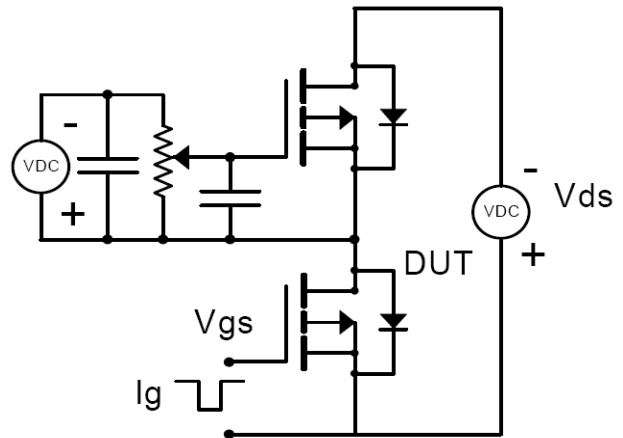
Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source breakdown voltage	-30			V	$V_{GS} = 0V, I_D = -$
$R_{DS(on)}$	Static Drain-to-Source on-resistance		39	50		$V_{GS}=-10V, I_D = -4.2A$
			48	65		$V_{GS}=-4.5V, I_D = -4A$
			68	120		$V_{GS}=-2.5V, I_D = -1A$

Test Circuits and Waveforms

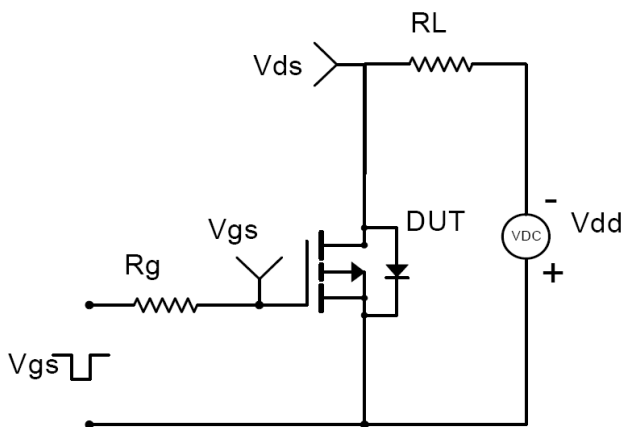
EAS Test Circuit:



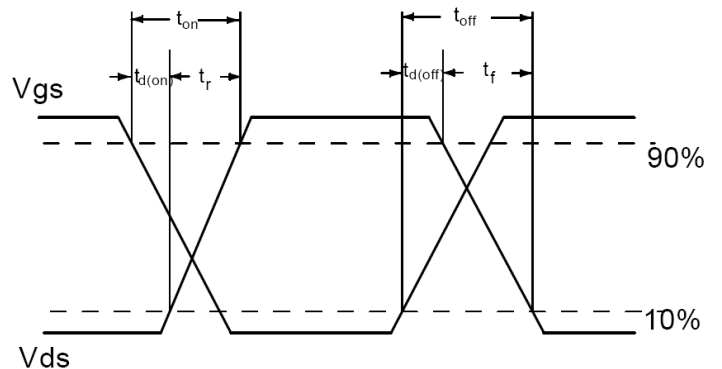
Gate Charge Test Circuit:



Switching Time Test Circuit:



Switch Waveforms:



Notes:

Calculated continuous current based on maximum allowable junction temperature.

Repetitive rating; pulse width limited by max. junction temperature.

The power dissipation PD is based on max. junction temperature, using junction-to-case thermal resistance.

The value of R_A is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$

Typical Electrical and Thermal Characteristics

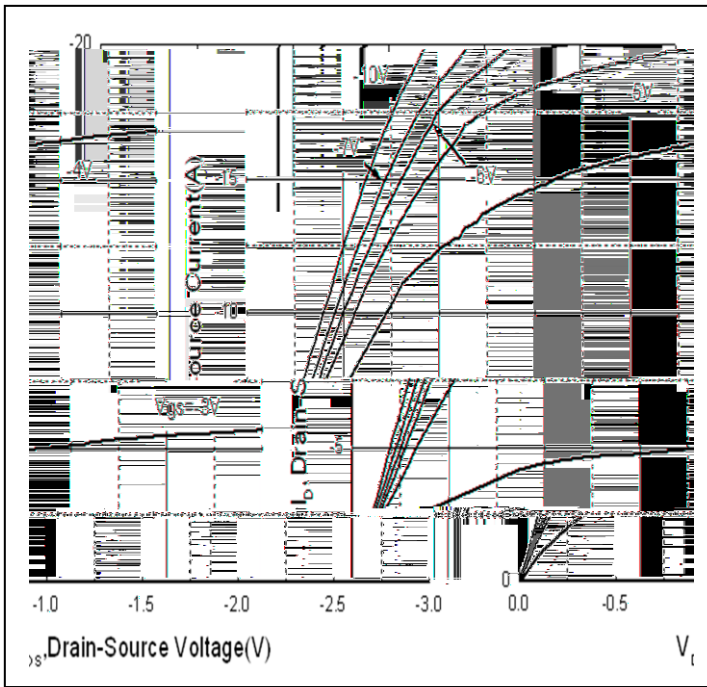


Figure 1 Typical Output Characteristics

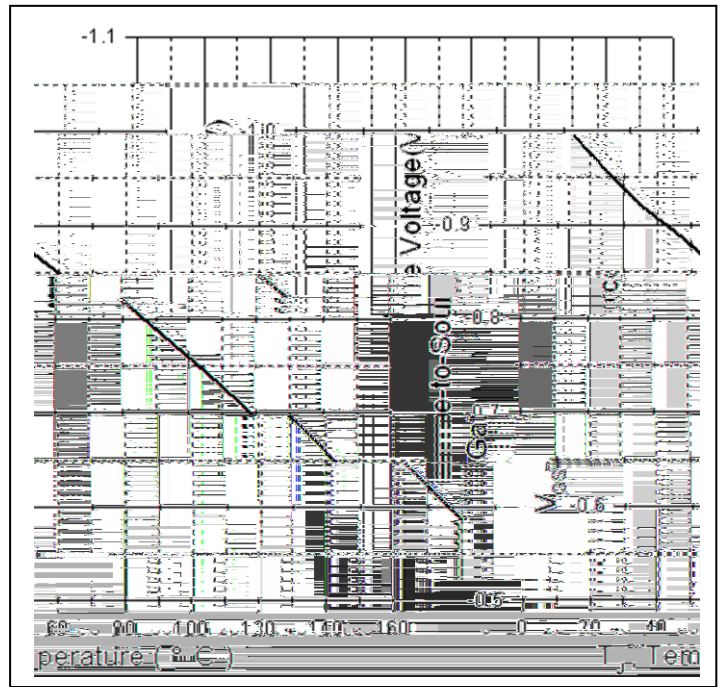


Figure 2. Gate to Source Cut-off Voltage

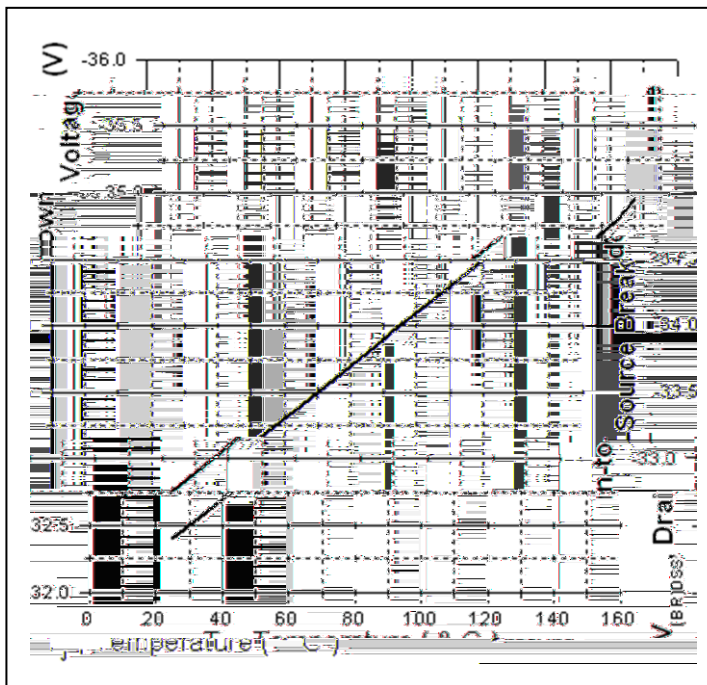


Figure 3. Drain-to-Source Breakdown Voltage vs. Junction Temperature

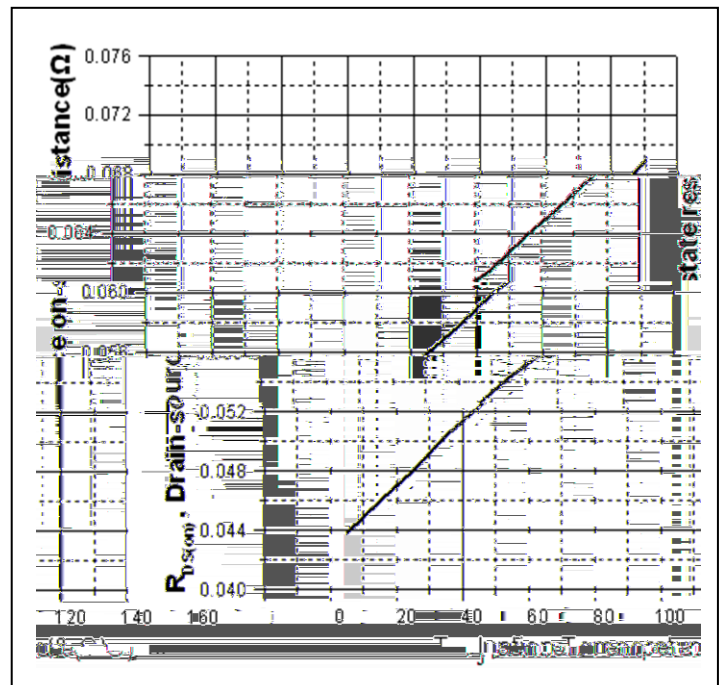


Figure 4. Normalized On-Resistance vs. Junction Temperature

Typical Electrical and Thermal Characteristics

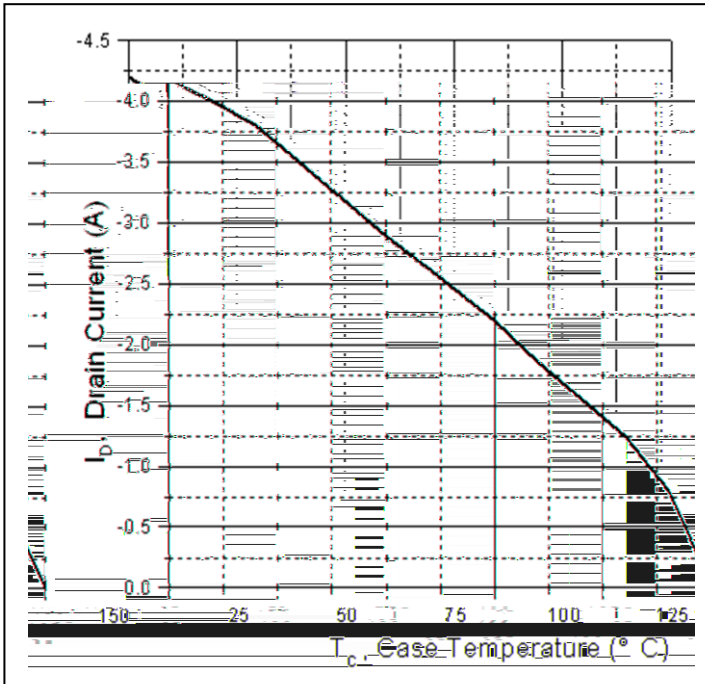


Figure 5. Maximum Drain Current vs. Case Temperature

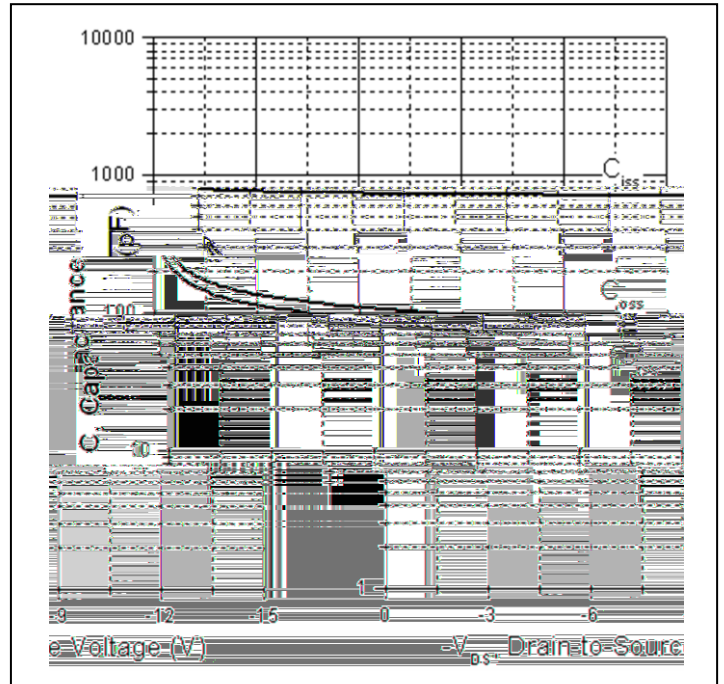


Figure 6. Typical Capacitance vs. Drain-to-Source Voltage

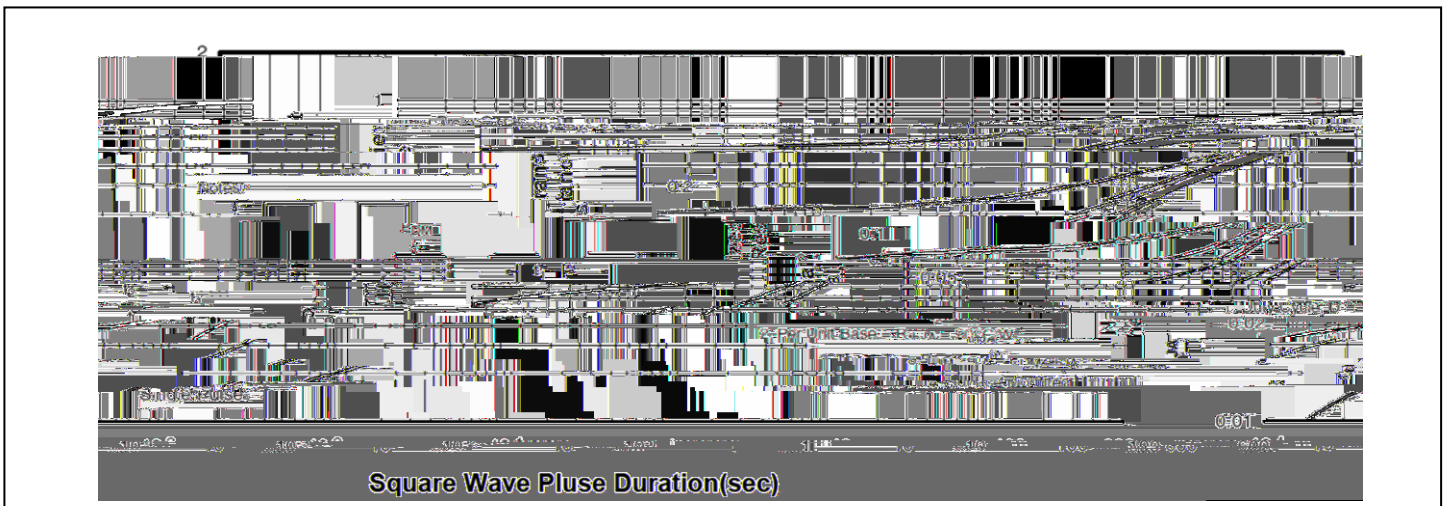
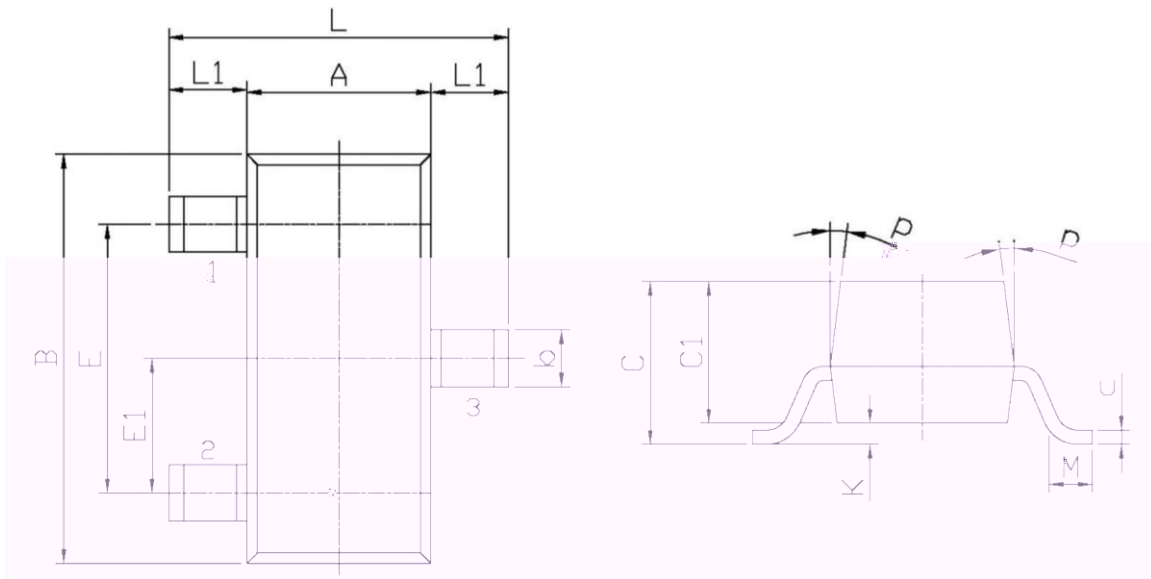


Figure7. Maximum Effective Transient Thermal Impedance Junction-to-Case

Mechanical Data



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.2	2.7	C	1.30Max	
L1	0.45	0.65	C1	0.90	1.20
A	1.15	1.50	ε	0.05	0.20
B	2.70	3.10	K	0.10	0.10
E	1.70	2.10	M	0.20MIN	
E1	0.85	1.05	P	7°	
b	0.35	0.55			

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