

Plastic-Encapsulate MOSFETS

P-Channel 20-V(D-S) MOSFET

Features

- VDS -20V, VGS $\pm$ 8V, ID -0.8A
- $R_{DS(on)}$ @-4.5V, < 300m Ω
- $R_{DS(on)}$ @-2.5V, < 400m Ω
- $R_{DS(on)}$ @-1.8V, < 530m Ω

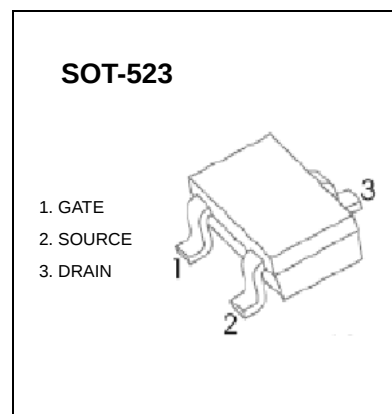
General Description

BC2101ET is P-Channel enhancement mode power MOSFET which is produced with high cell density and DMOS trench technology. This device particularly suits low voltage applications, especially for battery powered circuits, the tiny and thin outline saves PCB consumption.

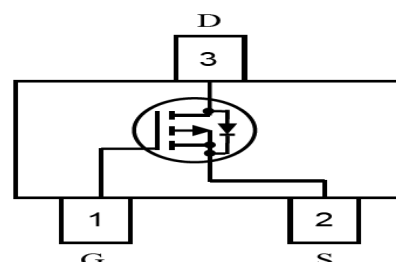
Application

- Load Switch
- A Switch and Battery Switch for Portable Devices
- RoHS product for packing code suffix "G"
- Halogen free product for packing code suffix "H"

MARKING: 21E



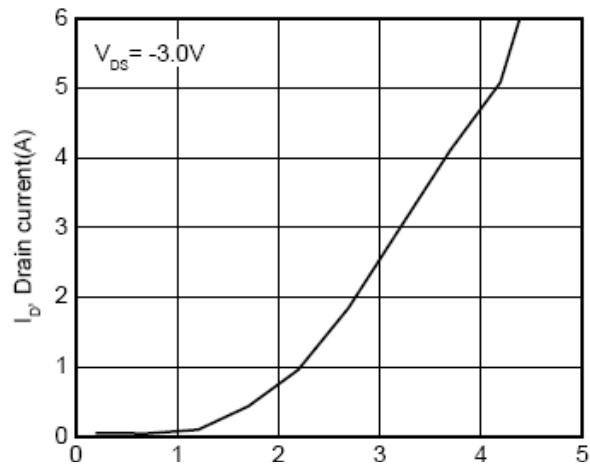
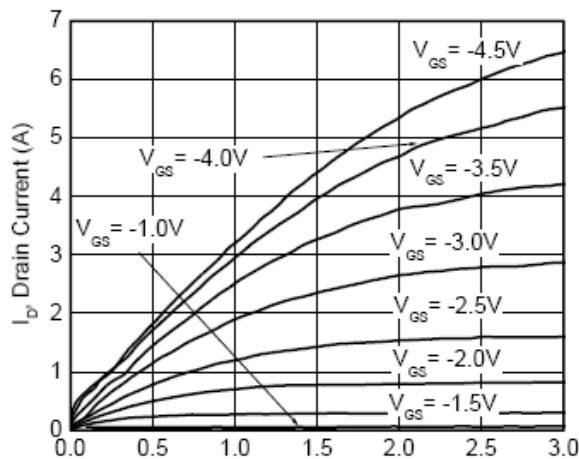
Pin configurations



Absolute Maximum Ratings				
Parameter		Symbol	Rating	Units
Drain-Source Voltage		VDS	-20	V
Gate-Source Voltage		VGS	$\pm$ 8	V
Drain Current (Note 1)	Continuous	ID	-0.8	A
	Pulsed		-3	
Total Power Dissipation	@TA=25°C	PD	250	mW
	@TA=75°C		-	
Operating Junction Temperature Range		TJ	-55 to 150	°C

Electrical Characteristics (T _J =25°C unless otherwise noted)						
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS (Note 2)						
BVDSS	Drain-Source Breakdown Voltage	ID=-250μA, VGS=0 V	-20			V
IDSS	Zero Gate Voltage Drain Current	VDS=-16 V, VGS=0 V			-1	μA
IGSS	Gate-Body leakage current	VDS=0 V, VGS=±8 V			±10 0	μA
VGS(th)	Gate Threshold Voltage	VDS=VGS ID=-250μA	-0.35	-0.6	-1	V
RDS(O N)	Static Drain-Source On-Resistance ²	VGS=-4.50V, ID=-0.8A	-	-	300	mΩ
		VGS=-2.5V, ID=-0.5A	-	-	400	
		VGS=-1.8V, ID=-0.3A	-	-	530	
DYNAMIC PARAMETERS						
Ciss	Input Capacitance	VGS=0V, VDS=-6V, f=200KHz		200		pF
Coss	Output Capacitance			80		pF
Crss	Reverse Transfer Capacitance			150		pF
SWITCHING PARAMETERS						
td(on)	Turn-On DelayTime ²	VGS=-4.5V, VDD=-6V, RL=6Ω, RG=6Ω ID=-1A		10		ns
td(off)	Turn-Off DelayTime			62		
td(r)	Turn-On Rise Time			19		
td(f)	Turn-Off Fall Time			18		
VSD	Drain-Source Diode Forward Voltage	VGS=0V,IS=-0.3A	-	-0.78	-1.2	V

Typical Characteristics



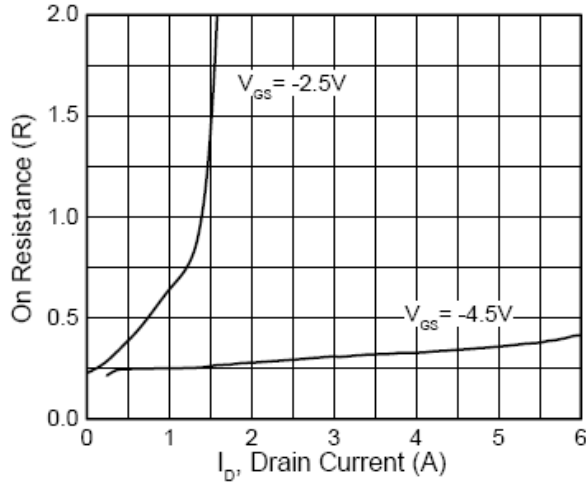


Figure 3. On Resistance VS I_D

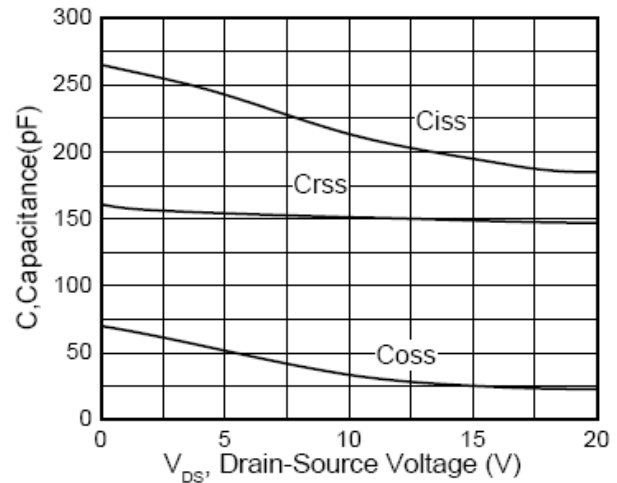


Figure 4. Capacitance

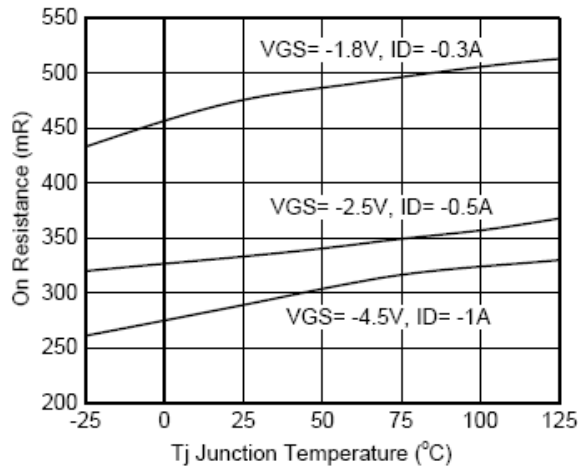


Figure 5. On resistance VS Temperature

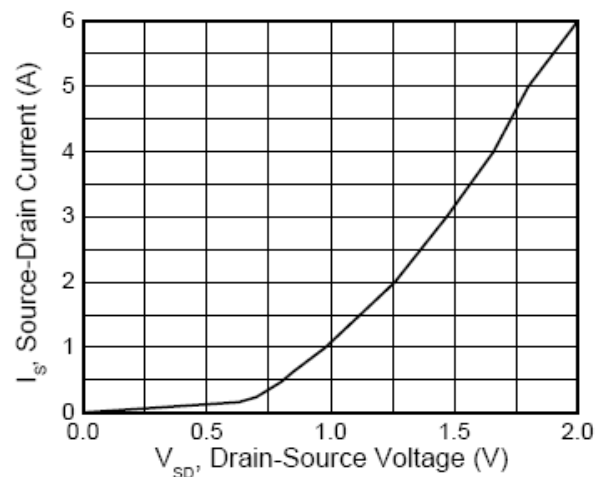


Figure 6. V_{DS} VS I_D

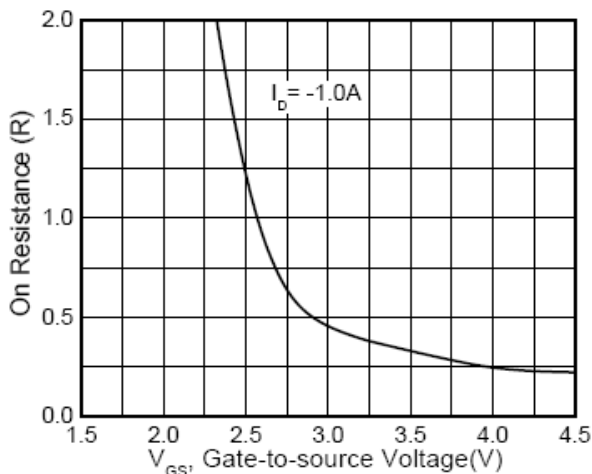


Figure 7. On Resistance VS V_{GS}

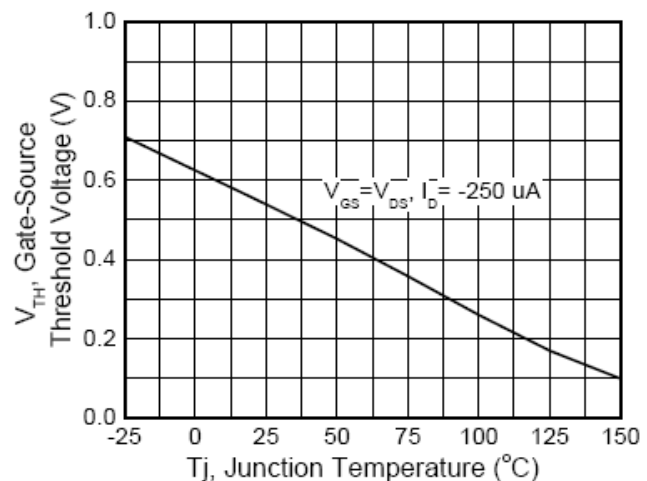


Figure 8. Gate Threshold Vs. Temperature