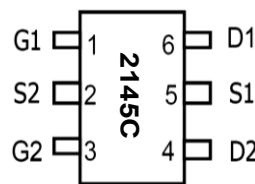
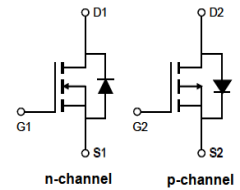


Main Product Characteristics

	N-ch	P-ch
V_{DSS}	20V	-20V
$R_{DSon}(typ.)$	22 m Ω	62 m Ω
I_D	4.9A	-2.9A


SOT23-6

Marking and Pin Assignments

Schematic Diagram
Features and Benefits

- Advanced trench MOSFET process technology
- Special designed for load switching and battery protection applications
- AEC-Q101 qualified


Description

It utilizes the latest trench 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 load switching and a wide variety of other applications

Absolute Max Rating

Symbol	Parameter	Max.		Units
		N-channel	P-channel	
$I_D @ T_C = 25^\circ C$	Continuous Drain Current, $V_{GS} @ 4.5V$ ①	4.9	-2.9	A
I_{DM}	Pulsed Drain Current ②	18	-11.6	
$P_D @ T_C = 25^\circ C$	Power Dissipation ③	1.76	1.76	W
V_{DS}	Drain-Source Voltage	20	-20	V
V_{GS}	Gate-to-Source Voltage	± 8	± 8	V
$T_J \quad T_{STG}$	Operating Junction and Storage Temperature Range	-55 to +150	-55 to +150	$^\circ C$

Thermal Resistance

Symbol	Characteristics	Typ.	Max.		Units
			N-channel	P-channel	
R _{θJA}	Junction-to-ambient (t ≤ 10s) ④	—	71	116	°C/W
	Junction-to-Ambient (PCB mounted, steady-state) ④	—	51	56	°C/W

Electrical Characteristics @T_A=25°C unless otherwise specified

Symbol	Parameter		Min.	Typ.	Max.	Units	Conditions
V _{(BR)DSS}	Drain-to-Source breakdown voltage	N-channel	20	—	—	V	V _{GS} = 0V, I _D = 250μA
		P-channel	-20	—	—		V _{GS} = 0V, I _D = -250μA
R _{DS(on)}	Static Drain-to-Source on-resistance	N-channel	—	22	30	mΩ	V _{GS} =4.5V, I _D = 3.6A
		P-channel	—	62	80		V _{GS} =-4.5V, I _D = -3A
		N-channel	—	26	40		V _{GS} =3.5V, I _D = 3.1A
		P-channel	—	67	100		V _{GS} =-3.5V, I _D = -2A
V _{GS(th)}	Gate threshold voltage	N-channel	0.4	—	1	V	V _{DS} = V _{GS} , I _D = 250μA
		P-channel	-0.4	—	-1		V _{DS} = V _{GS} , I _D = -250μA
I _{DSS}	Drain-to-Source leakage current	N-channel	—	—	1	μA	V _{DS} = 20V, V _{GS} = 0V
		P-channel	—	—	-1		V _{DS} = -20V, V _{GS} = 0V
I _{GSS}	Gate-to-Source forward leakage	N-channel	—	—	100	nA	V _{GS} = 8V
		N-channel	—	—	-100		V _{GS} = -8V
		P-channel	—	—	100		V _{GS} = 8V
		P-channel	—	—	-100		V _{GS} = -8V
C _{iss}	Input capacitance	N-channel	—	295	—	pF	V _{GS} = 0V, V _{DS} = 20V, f = 1.0MHz
C _{oss}	Output capacitance	N-channel	—	50	—		
C _{rss}	Reverse transfer capacitance	N-channel	—	39	—		
C _{iss}	Input capacitance	P-channel	—	396	—		V _{GS} = 0V, V _{DS} = -20V, f = 1.0MHz
C _{oss}	Output capacitance	P-channel	—	53	—		
C _{rss}	Reverse transfer capacitance	P-channel	—	46	—		

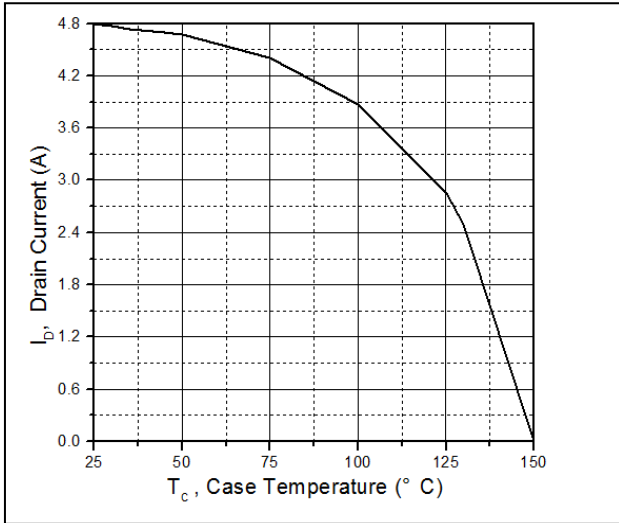
Source-Drain Ratings and Characteristics

Symbol	Parameter		Min.	Typ.	Max.	Units	Conditions
I _S	Continuous Source Current (Body Diode)	N-channel	—	—	4.9	A	MOSFET symbol showing the integral reverse p-n junction diode.
		P-channel	—	—	-2.9		
I _{SM}	Pulsed Source Current (Body Diode)	N-channel	—	—	18	A	
		P-channel	—	—	-11.6		
V _{SD}	Diode Forward Voltage	N-channel	—	0.7	1.2	V	I _S =0.94A, V _{GS} =0V
		P-channel	—	-0.7	-1.2		I _S =-0.75A, V _{GS} =0V

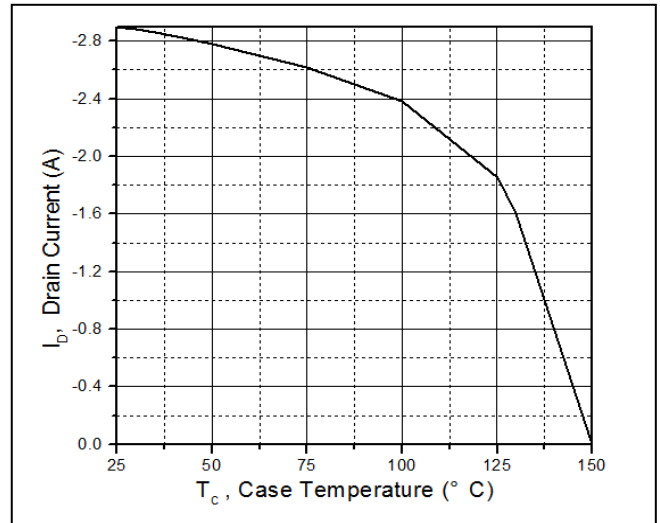
Notes:

- ① The maximum current rating is limited by bond-wires.
- ② Repetitive rating; pulse width limited by max. junction temperature.
- ③ The power dissipation PD is based on max. junction temperature, using junction-to- ambient thermal resistance.
- ④ The value of R_{θJA} is measured with the device mounted on 1in 2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C

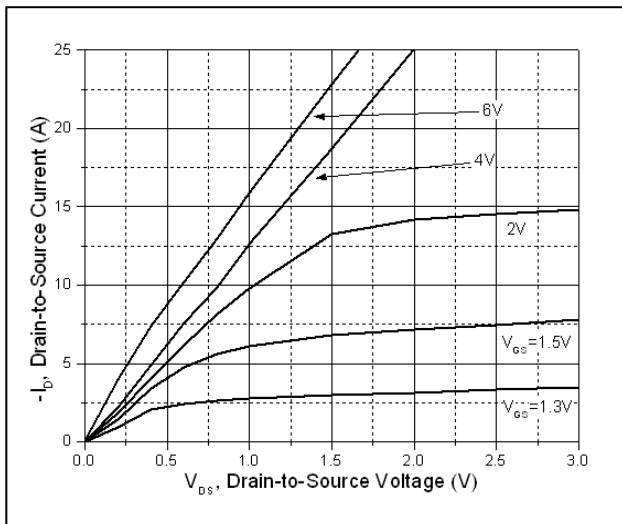
Typical electrical and thermal characteristics



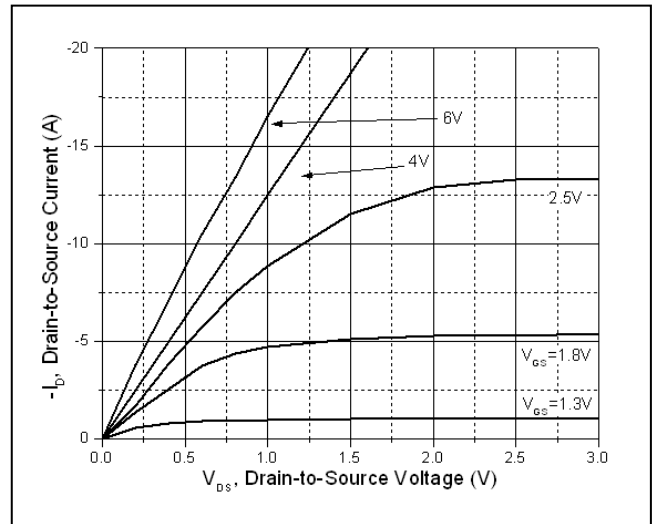
Maximum Drain Current vs. Case Temperature(N-Channel)



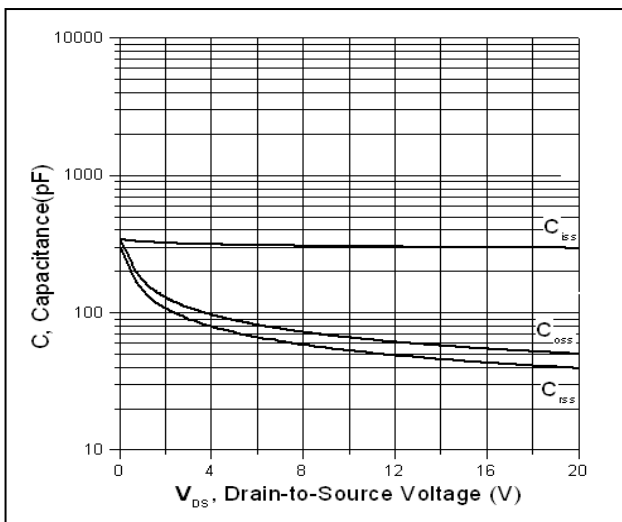
Maximum Drain Current vs. Case Temperature(P-Channel)



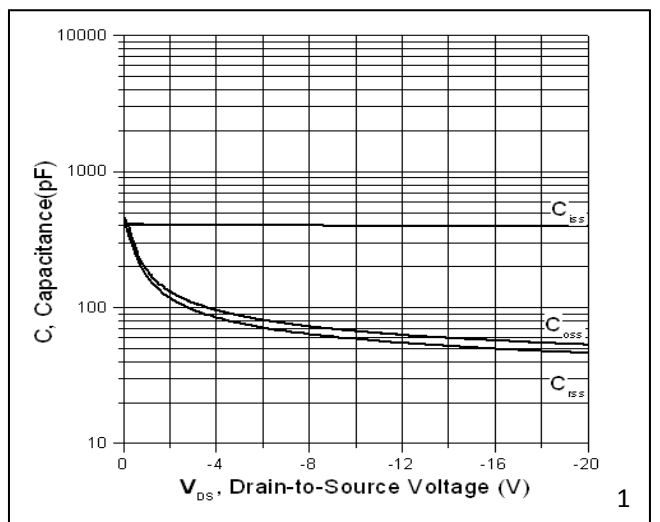
Typical Output Characteristics (N-Channel)



Typical Output Characteristics (P-Channel)



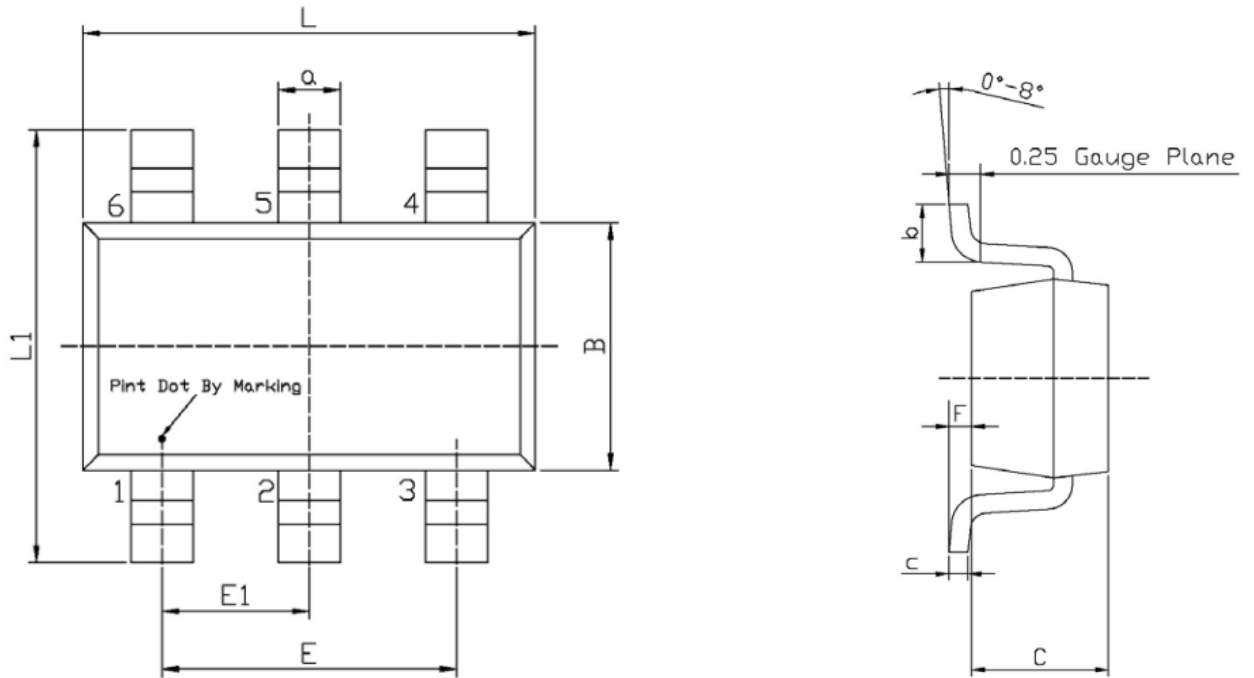
Typical Capacitance vs. Drain-to-Source Voltage(N-Channel)



Typical Capacitance vs. Drain-to-Source Voltage(P-Channel)

Mechanical Data:

SOT23-6 Package Outline(Unit:mm)



Unit: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.82	3.02	E1	0.85	1.05
B	1.50	1.70	a	0.35	0.50
C	0.90	1.30	c	0.10	0.20
L1	2.60	3.00	b	0.35	0.55
E	1.80	2.00	F	0	0.15

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