

Main Product Characteristics

V_{DSS}	-30V
$R_{DS(on)}$	44a (typ.)
I_D	-4.2A



Marking and Pin
Assignments

Schematic Diagram

Features and Benefits

- Advanced MOSFET process technology
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Description

Absolute Max Rating

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

Thermal Resistance

Symbol	Characterizes	Typ.	Max.	Units
R_{JA}	Junction-to-Ua VYbh h g		90	$^\circ\text{C} / \text{W}$



Electrical Characterizes

Symbol	Parameter	Min.	Typ.	Max.	Units	Conditions
$V_{(BR)DSS}$	Drain-to-Source breakdown voltage	-30			V	$V_{GS} = 0V, I_D = -) 5$
$R_{DS(on)}$	Static Drain-to-Source on-resistance		44	55	a	$V_{GS} = -10V, I_D = -4A$
			52	75		$V_{GS} = -4.5V, I_D = -3A$
$V_{GS(th)}$	Gate threshold voltage	-0.6		-1.3	V	$V_{DS} = V_{GS}, I_D = -) 5$
I_{DSS}	Drain-to-Source leakage current			-1	5	$V_{DS} = -30V, V_{GS} = 0V$
I_{GSS}	Gate-to-Source forward leakage			100	nA	$V_{GS} = 12V$
				-100		$V_{GS} = -12V$
Q_g	Total gate charge		11		nC	$I_D = -4A,$ $V_{DS} = -15V,$ $V_{GS} = -4.5V$
Q_{gs}	Gate-to-Source charge		2.1			
Q_{gd}	Gate-to-Drain("Miller") charge		2.7			
$t_{d(on)}$	Turn-on delay time		9.8		ns	$V_{GS} = -4.5V, V_{DD} = -20V,$ $R_{GEN} = 3 \quad F_L = 20$
t_r	Rise time		11			
$t_{d(off)}$	Turn-Off delay time		25			
t_f	Fall time		8			
C_{iss}	Input capacitance		758		pF	$V_{GS} = 0V,$ $V_{DS} = -20V,$ 1 MHz
C						



Test Circuits and Waveforms

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-

Typical Electrical and Thermal Characteristics

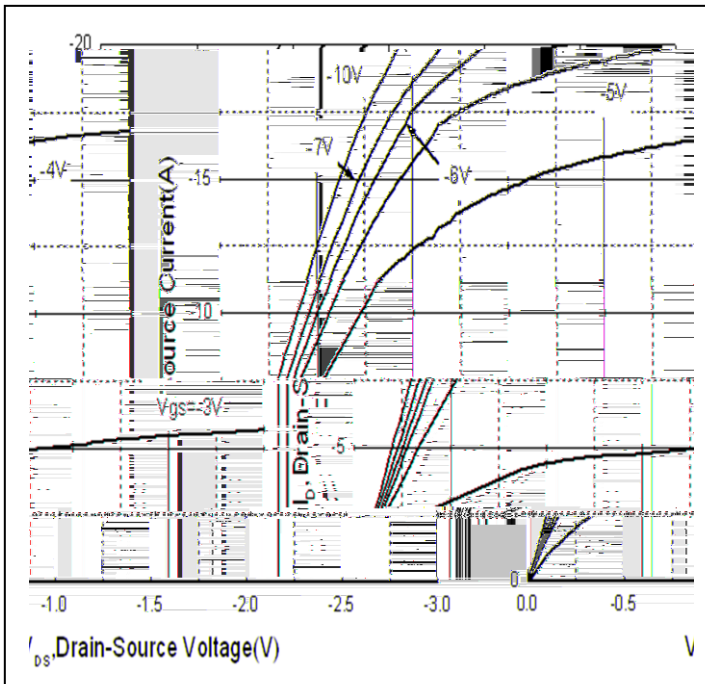


Figure1. Typical Output Characteristics

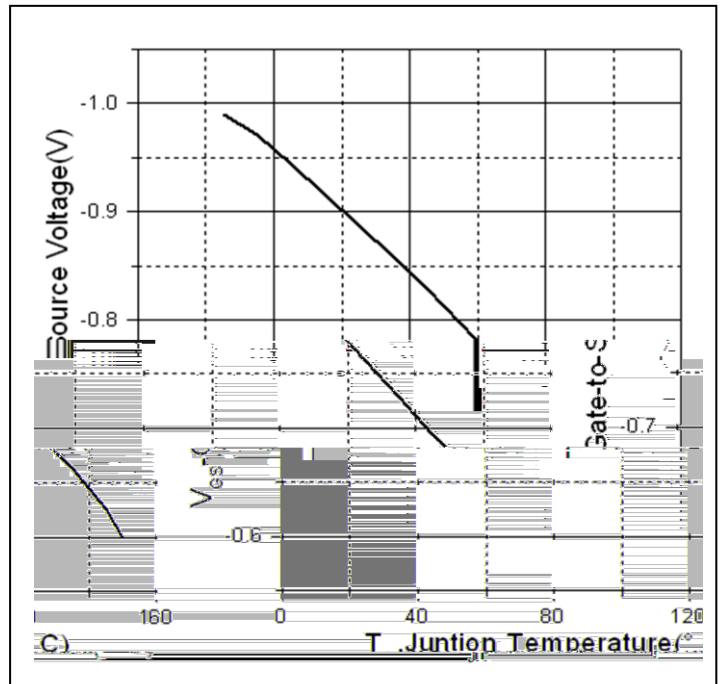


Figure2. Gate to Source Cut-off Voltage

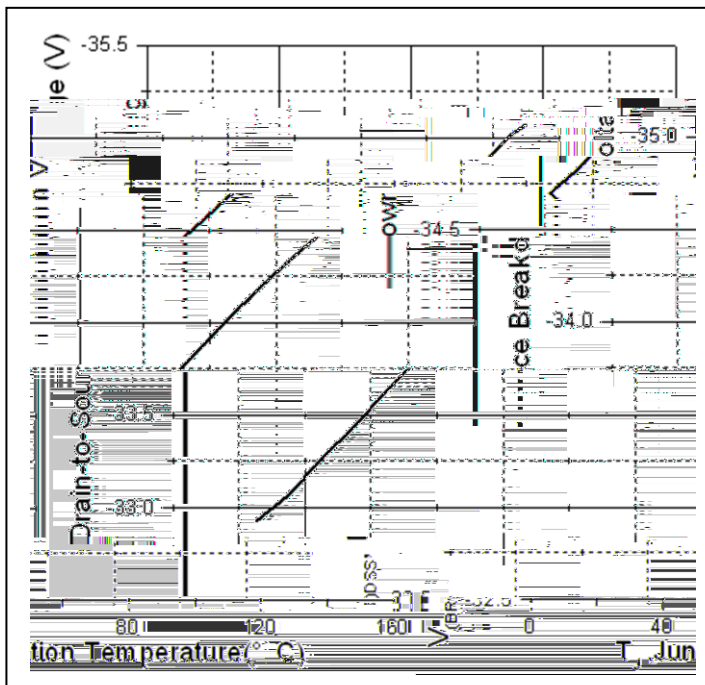


Figure3. Drain-to-Source Breakdown Voltage vs. Junction Temperature

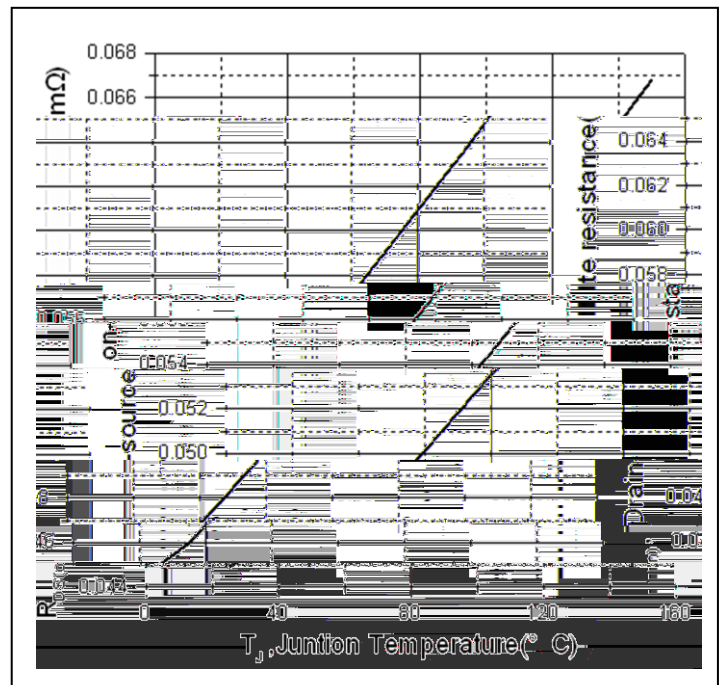


Figure4. Normalized On-Resistance vs. Junction Temperature

Typical Electrical and Thermal Characteristics

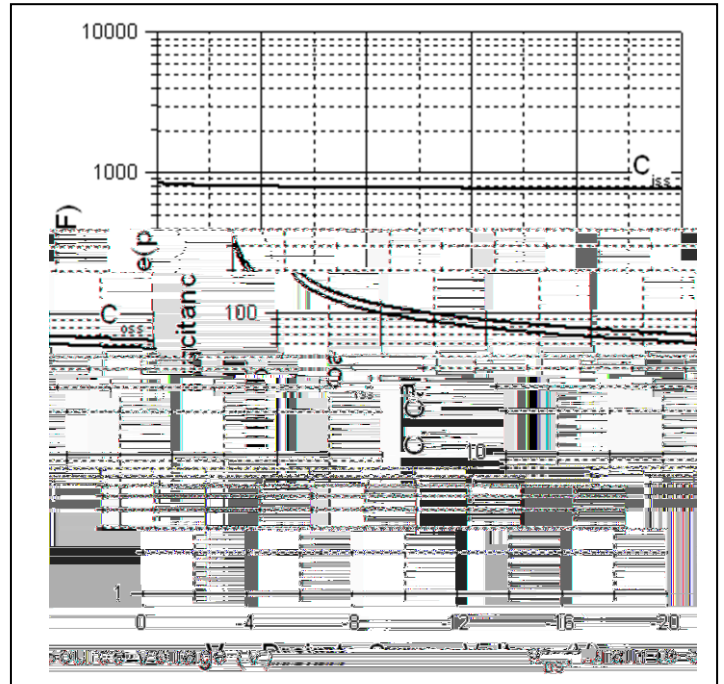
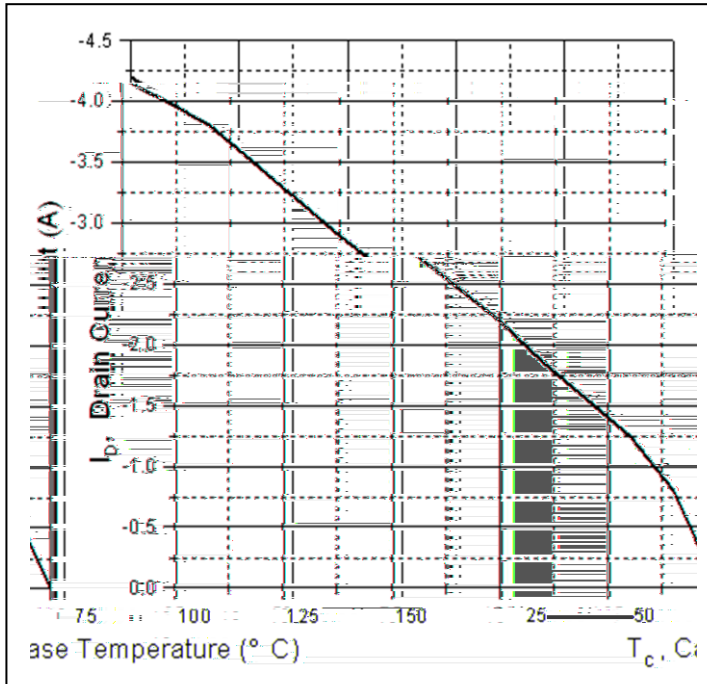
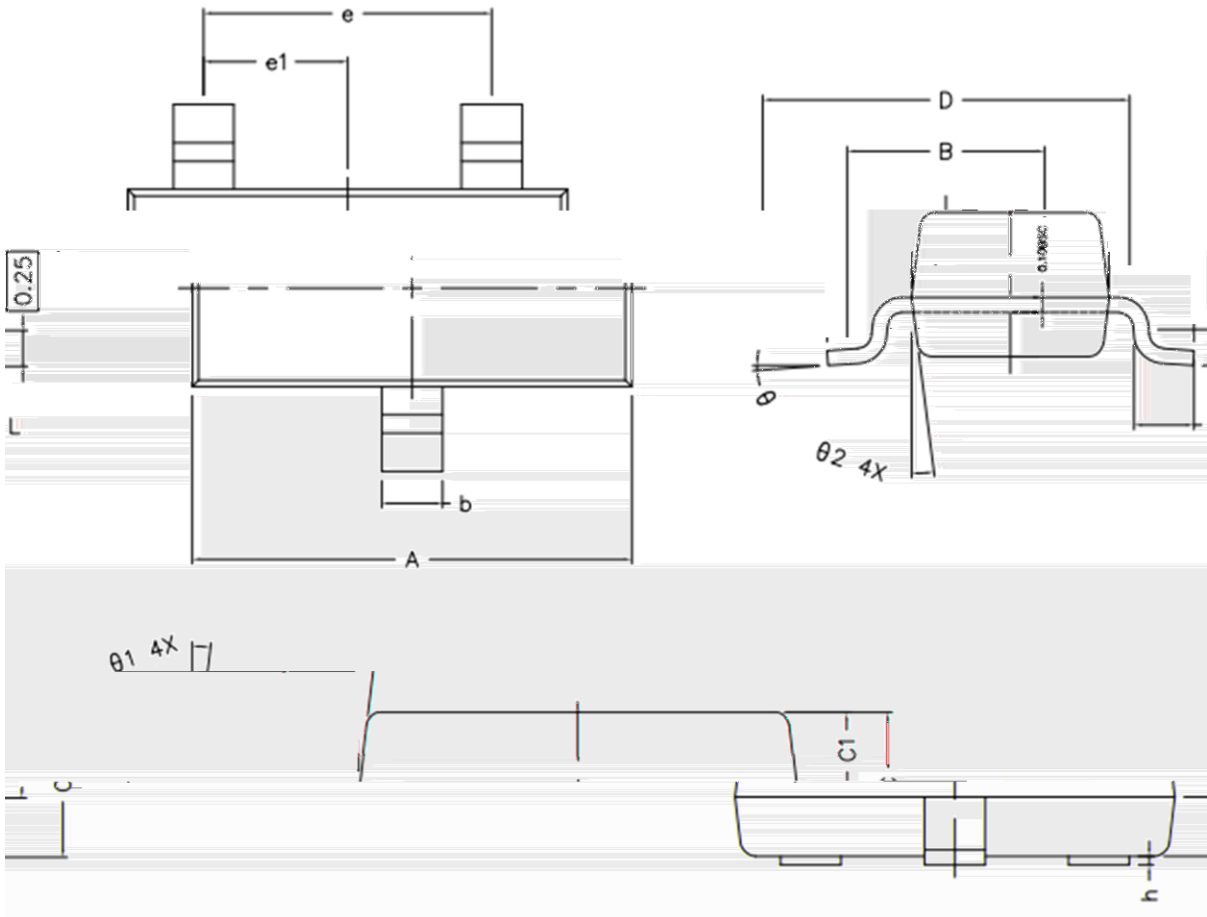


Figure5. Maximum Drain Current vs. Case Temperature

Mechanical Data

SOT-23 Package Outline(Unit:mm)



COMMON DIMENSIONS, millimeters (UNITS OF MEASURE IS mm)			
MAX.		MINI.	NORMAL
3.000	A	2.800	2.900
1.400	B	1.200	1.300
1.100	C	0.900	1.000
0.600	C1	0.500	0.550
2.500	D	2.300	2.400
0.400	e	0.300	0.350
0.300	e1	0.200	0.250
0.100	θ1	0.080	0.090
0.450	θ2	0.350	0.400
90° TYPE	e	0.300	0.350
95° TYPE	e1	0.200	0.250
TYPE	θ1	0.080	0.090
TYPE	θ2	0.350	0.400
TYPE	θ2	0.350	0.400



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