

SE2305A
20V P-Channel Enhancement-Mode MOSFET

Revision:A

General Description

SE2305A is produced with high cell density DMOS trench technology, which is especially used to minimize on-state resistance. This device particularly suits low voltage applications such as portable equipment, power management and other battery powered circuits, and low in-line power dissipation are needed in a very small outline surface mount

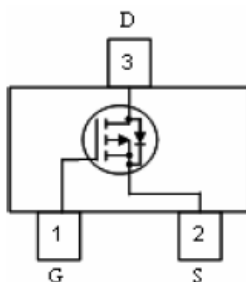
Features

- $V_{DS} = -20V$
- $R_{DS(on)} = 68m\Omega @ V_{GS} = -1.8V, I_D = -2A$
- $R_{DS(on)} = 52m\Omega @ V_{GS} = -2.5V, I_D = -4.1A$
- $R_{DS(on)} = 39m\Omega @ V_{GS} = -4.5V, I_D = -4.7A$

Application

- Load Switch
- A Switch and Battery Switch for Portable Devices

Pin configurations(SOT23)



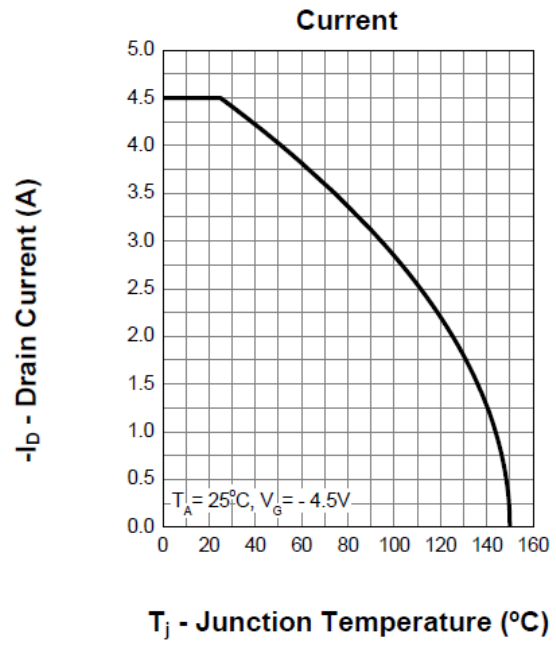
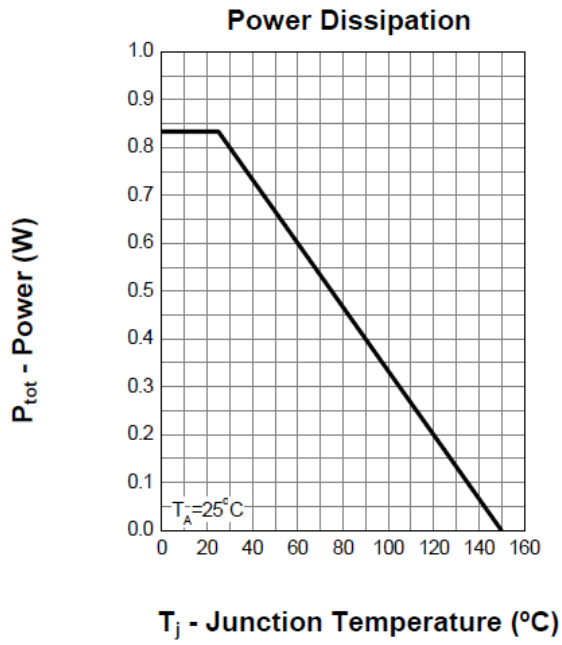
Absolute Maximum Ratings

Parameter		Symbol	Rating	Units
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	± 12	V
Drain Current (Note 1)	Continuous	I_D	-4.7	A
	Pulsed		-20	
Total Power Dissipation	@TA=25°C	P_D	1.25	W
	@TA=75°C		0.8	
Operating Junction Temperature Range		T_J	-55 to 150	°C

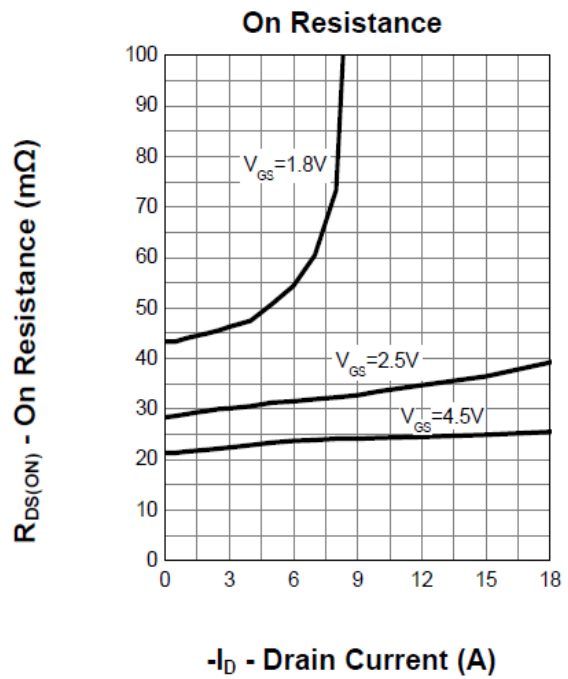
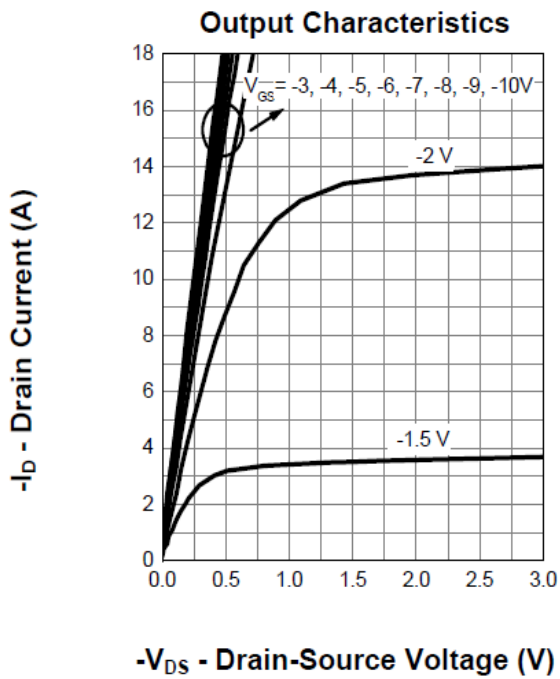
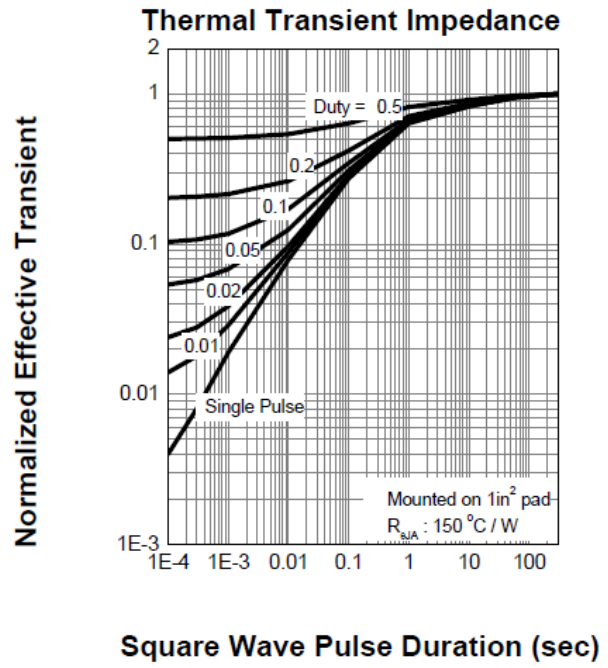
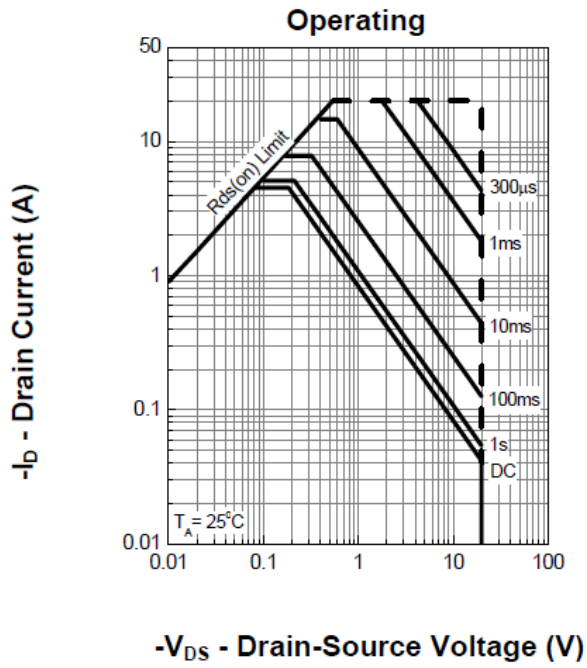
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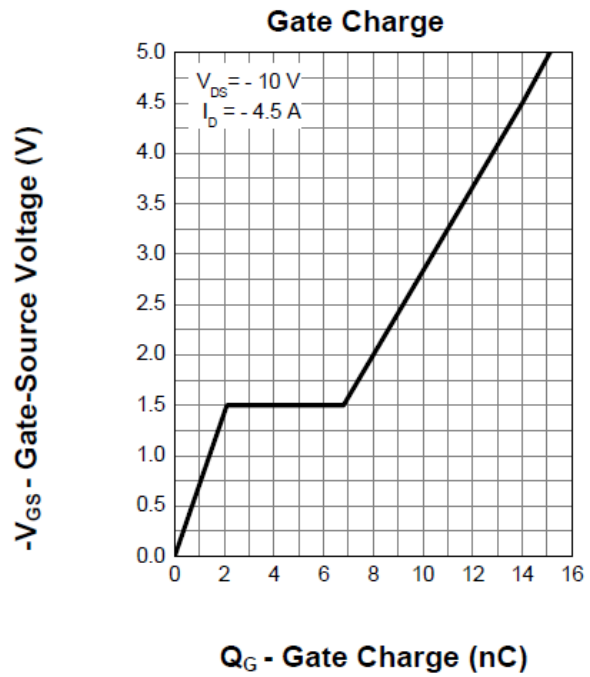
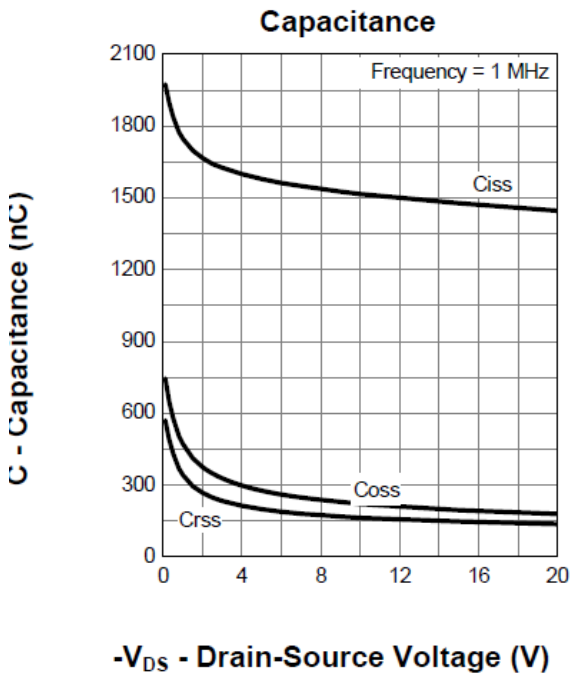
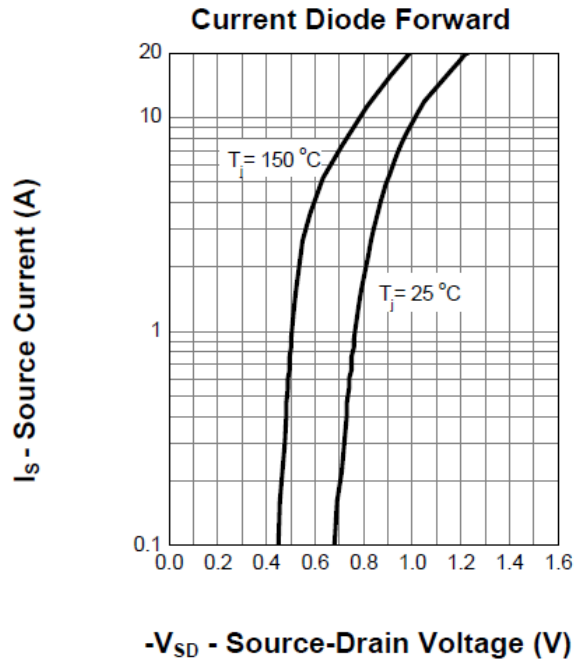
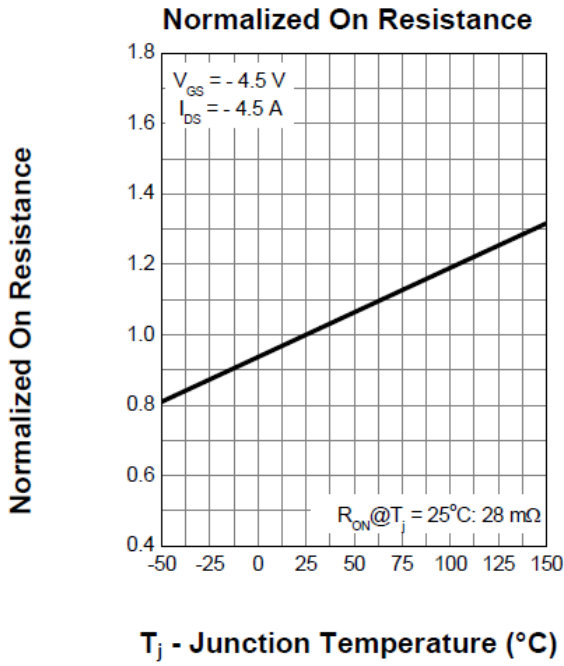
Electrical Characteristics (T _J =25°C unless otherwise noted)						
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS (Note 2)						
BVDSS	Drain-Source Breakdown Voltage	I _D =-250μA, V _{GS} =0 V	-20	-	-	V
IDSS	Zero Gate Voltage Drain Current	V _{DS} =-16 V, V _{GS} =0 V	-	-	1	μA
IGSS	Gate-Body leakage current	V _{DS} =0 V, V _{GS} =±8 V	-	-	±100	μA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} I _D =-250μA	-0.4	-	-1	V
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =-1.8V, I _D =-2A	-	45	68	mΩ
		V _{GS} =-2.50V, I _D =-4.1A		35	52	
		V _{GS} =-4.5V, I _D =-4.7A	-	30	39	
DYNAMIC PARAMETERS						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-10V, f=1MHz	-	1020	-	pF
C _{oss}	Output Capacitance		-	191	-	pF
C _{rss}	Reverse Transfer Capacitance		-	140	-	pF
SWITCHING PARAMETERS						
t _{d(on)}	Turn-On DelayTime ²	V _{GS} =-10V, V _{GEN} =-4.5V, R _L =10Ω, R _G =6Ω	-	25	50	ns
t _{d(off)}	Turn-Off DelayTime		I _D =-1A	-	71	
V _{SD}	Drain-Source Diode Forward Voltage	V _{GS} =0V, I _S =-1		-	-1.2	V

Typical Characteristics

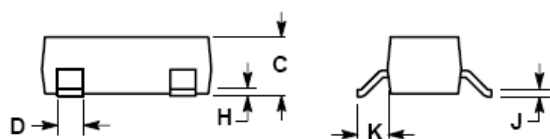
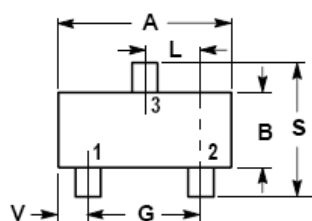


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NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

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