-16V P-Channel MOSFET

MOSFET Product Summary

V_{DS}	$R_{DS(ON)}$(Typ.)	I_D
-16V	27mΩ @V_{GS}=-4.5V	-6A
	38mΩ @V_{GS}=-2.5V	

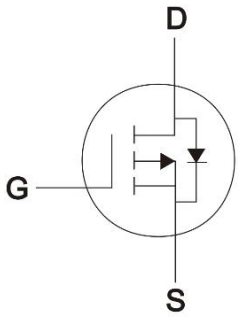
Description

The PM2305AL uses advanced Trench technology and designs to provide excellent $R_{DS(ON)}$ with low gate charge.It can be used in a wide variety of applications.The package form is SOT-23,which accord with the RoHS standard and Halogen Free standard.

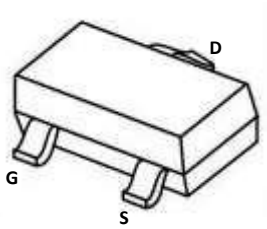
Features

- Low Gate Charge and $R_{DS(ON)}$
- Lead free product is acquired
- High Power and current handing capability

Dimensions and Pin Configuration



Circuit diagram



SOT-23

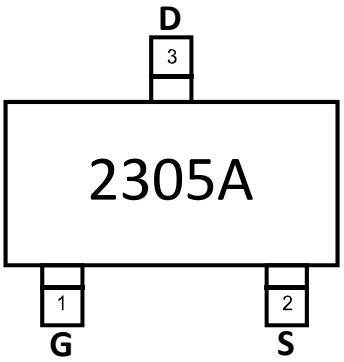
Mechanical Characteristics

- Package: SOT-23
- Case Material: “Green” Molding Compound
- Marking Information: See Below

Applications

- DC-DC converter
- Apply for high-frequency switching and synchronous rectification

Marking Information



2305A = Device Marking Code

Ordering Information

Part Number	Shipping	Reel Size
PM2305AL	3000/Tape & Reel	7 inch

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-16	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	-6	A

Pulsed Drain Current(note1)	I_{DM}	-22.4	A
Power Dissipation	P_D	1.6	W
Thermal Resistance from Junction to Ambient(note1)	$R_{\theta JA}$	75	℃/W
Junction Temperature	T_J	-55~ +150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

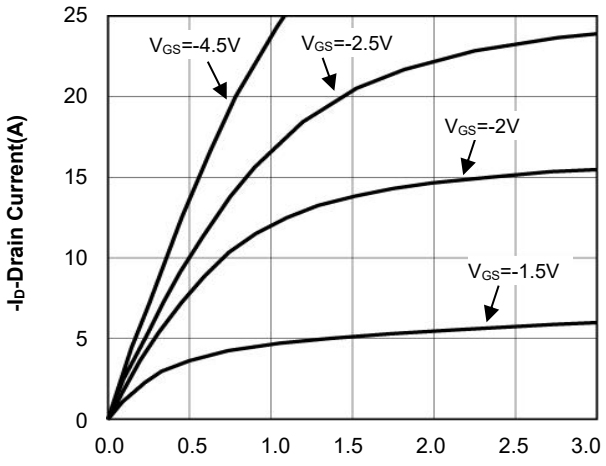
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-16	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-16V,V_{GS} = 0V	-	-	-1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±12V, V_{DS} = 0V	-	-	±100	nA
Gate threshold voltage	$V_{GS(TH)}$	V_{DS} =V_{GS}, I_D =-250μA	-0.5	-0.7	-1.0	V
Drain-source on-resistance	$R_{DS(ON)}$	V_{GS} =-4.5V, I_D =-2A	-	27	32	mΩ
		V_{GS} =-2.5V, I_D =-1.5A	-	38	45	
Diode Forward voltage(note1)	V_{SD}	I_S =-5A,V_{GS} = 0V	-	-	-1.25	V
Dynamic characteristics						
Input Capacitance	Ciss	V_{DS}=-15V,V_{GS}=0V,f=1MHz	-	835	-	pF
Output Capacitance	Coss		-	142	-	
Reverse Transfer Capacitance	Crss		-	93	-	
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$	V_{GS}=-4.5V, V_{DS}=-15V, R_L=5Ω, R_{GEN}=3Ω	-	12	-	nS
Turn-on rise time	t_r		-	30	-	
Turn-off delay time	$t_{d(off)}$		-	46	-	
Turn-off fall time	t_f		-	52	-	
Total Gate Charge	Qg	V_{GS}=-4.5V,V_{DS}=-15V,I_D=-3A		8.9		nC
Gate Source Charge	Qgs			1.5		
Gate Drain Charge	Qgd			2.1		

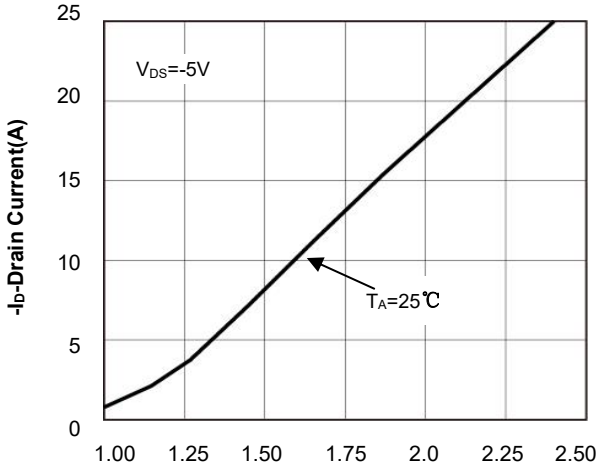
Notes:

1. Repetitive rating; pulse width limited by maximum junction temperature.
2. EAS condition: TJ=25℃,VDD=-20V,VG=10V, Rg=25Ω, L=0.5mH.

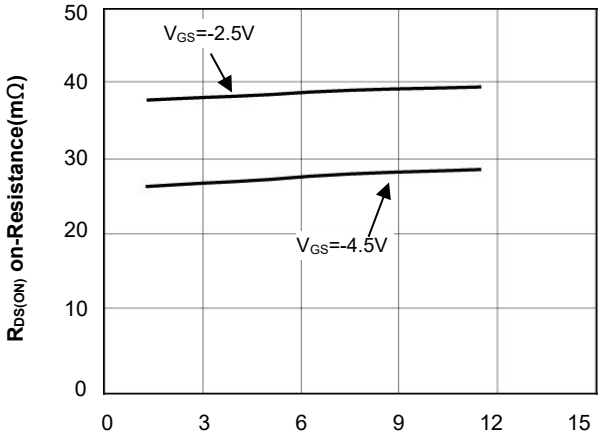
Typical Characteristics (T_A=25°C unless otherwise specified)



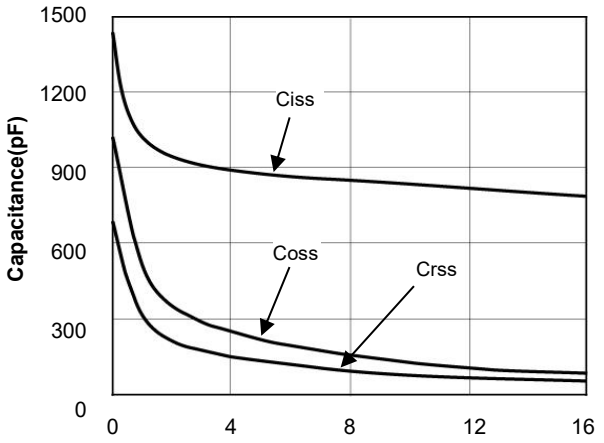
Drain Current vs. Drain-Source Voltage



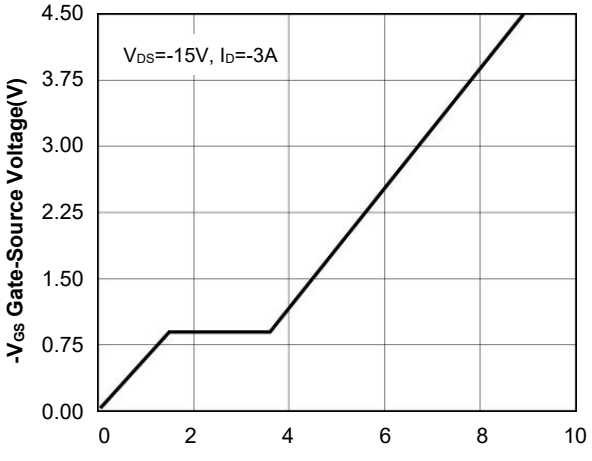
Drain Current vs. Gate-Source Voltage



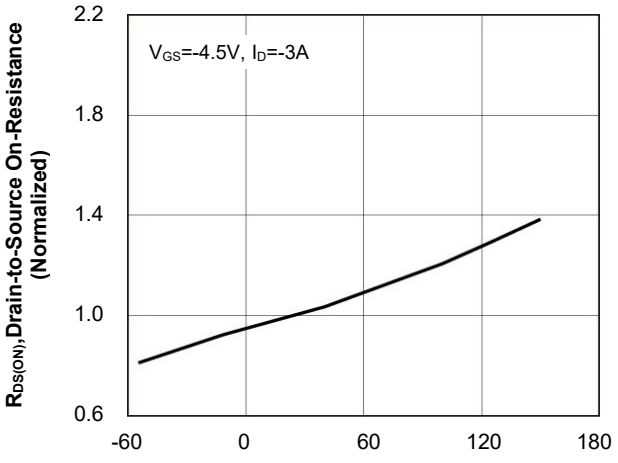
$R_{DS(ON)}$ On-Resistance vs. Drain-Current



Capacitance vs. Drain-Source Voltage

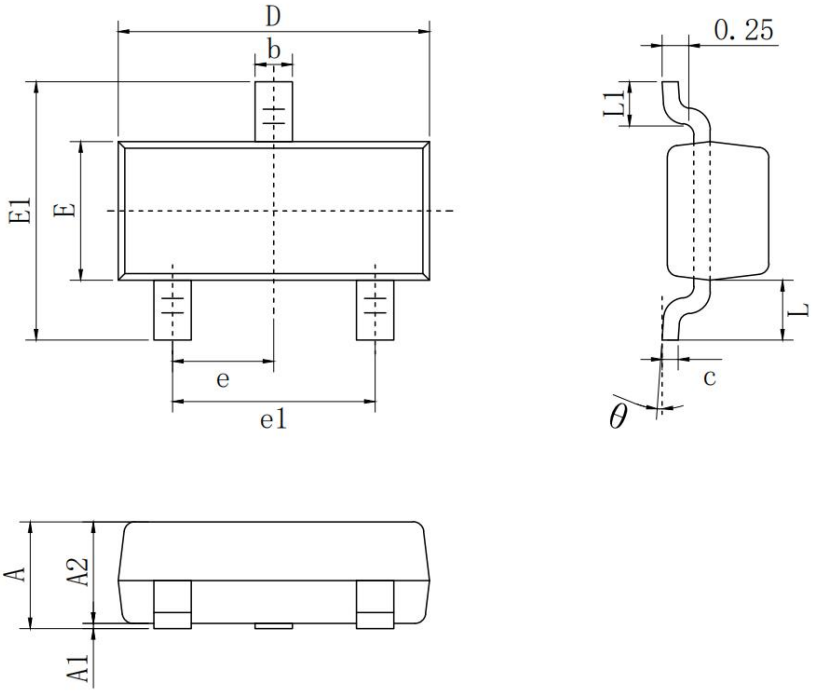


Drain Current vs. Drain-Source Voltage



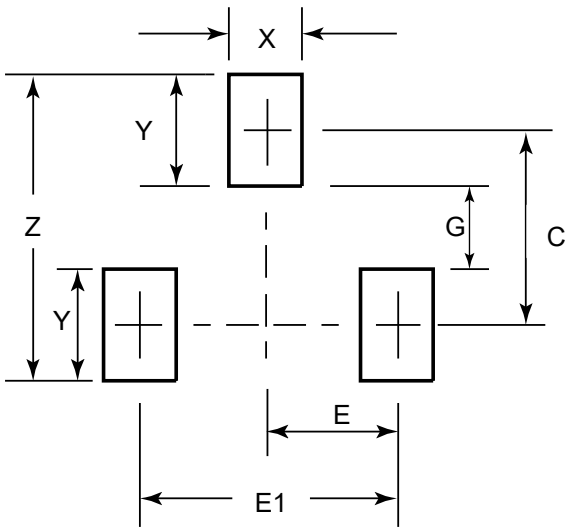
Normalized On-Resistance vs. Temperature

SOT-23 Package Outline Drawing



SYM	MILLIMETERS		
	MIN	NOM	MAX
A	0.90	-	1.15
A1	0.00	-	0.10
A2	0.90	0.95	1.05
b	0.30	0.40	0.50
c	0.15	-	0.25
D	2.85	2.90	2.95
E	1.25	1.30	1.35
E1	2.25	2.40	2.55
e	0.95 TYP.		
e1	1.80	-	2.00
L	0.55 REF.		
L1	0.30	-	0.50
θ	0°	-	8°

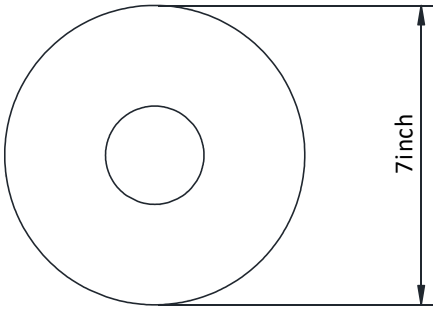
Suggested Land Pattern



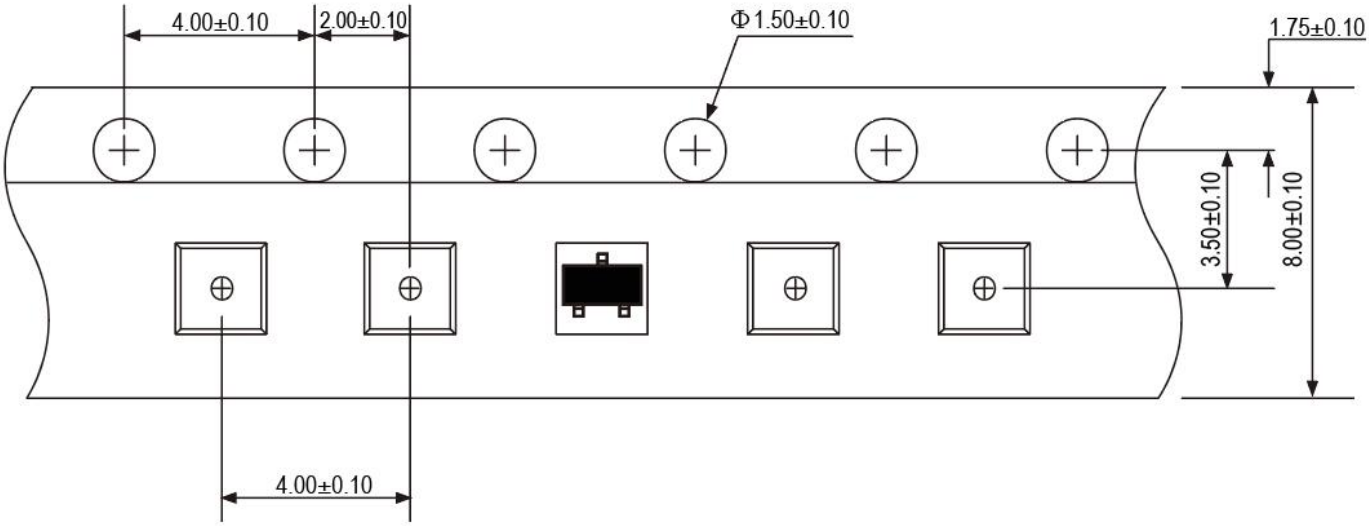
SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	2.20	0.087
E	0.95	0.037
E1	1.90	0.075
G	0.80	0.031
X	1.00	0.039
Y	1.40	0.055
Z	3.60	0.141

TAPE AND REEL INFORMATION

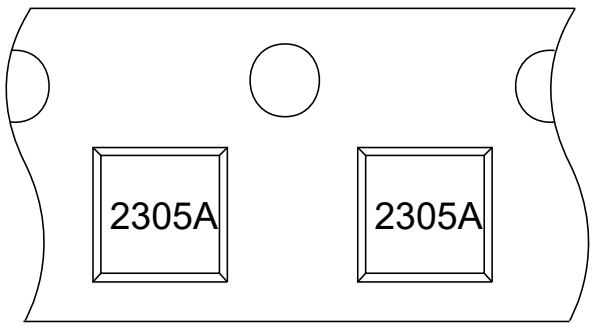
Reel Dimensions



Tape Dimensions



Unit:mm



User Direction of Feed

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