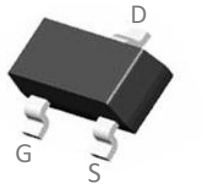
Description：

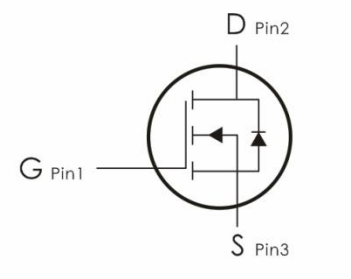
This N-Channel MOSFET uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.



Features：

1) V_{DS}=30V,I_D=5.8A,$R_{DS(ON)}$<26m Ω @V_{GS}=10V
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity trench technology for ultra $R_{DS(ON)}$.
5) Excellent package for good heat dissipation.



Package Marking and Ordering Information：

Part NO.	Marking	Package	Packing
DO3400B	3400	SOT-23	3000pcs/Reel

Absolute Maximum Ratings： (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±12	V
I_D	Continuous Drain Current-T_A=25℃	5.8	A
	Continuous Drain Current-T_A=100℃	3.8	
I_{DM}	Pulse Drain Current Tested note1	23.2	A
P_D	Power Dissipation-T_A=25℃	1.36	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient	92	℃/W

Electrical Characteristics: (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=250μA	30	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=30V	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±12V, V_{DS}=0A	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	0.5	0.9	1.4	V
$R_{DS(ON)}$	Drain-Source On-Resistance[note2]	V_{GS}=10V,I_D=4.2A	---	21	26	mΩ
		V_{GS}=4.5V,I_D=4A	---	23	30	
		V_{GS}=2.5V,I_D=1A	---	32	45	
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=15V, V_{GS}=0V, f=1MHz	---	700	---	pF
C_{oss}	Output Capacitance		---	60	---	
C_{rss}	Reverse Transfer Capacitance		---	50	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=15V,V_{GS}=4.5V, I_D=4A, R_{GEN}=3Ω	---	12	---	ns
t_r	Rise Time		---	52	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	17	---	ns
t_f	Fall Time		---	10	---	ns
Q_g	Total Gate Charge	V_{GS}=4.5V, V_{DS}=15V, I_D=4A	---	4.8	---	nC
Q_{gs}	Gate-Source Charge		---	1.2	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	1.7	---	nC
Drain-Source Diode Characteristics						
I_S	Continuous Source Current	V_D=V_G=0V	---	---	5.8	A
I_{SM}	Pulsed Source Current		---	---	23.2	A
V_{SD}	Forward Voltage	V_{GS}=0V , I_S=5.8A	---	---	1.2	V

Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Typical Characteristics: (T_C=25℃ unless otherwise noted)

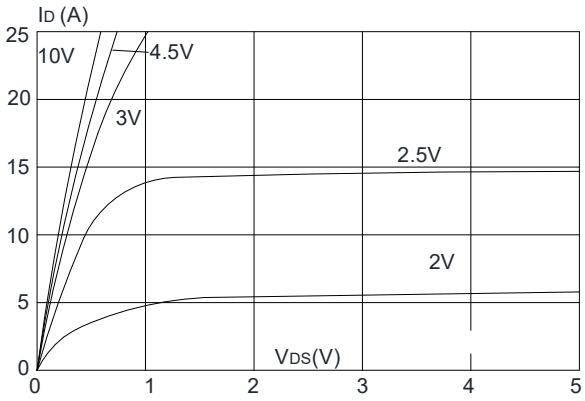


Figure1: Output Characteristics

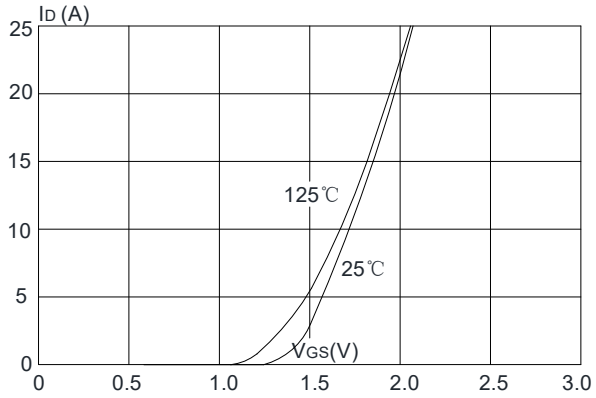


Figure 2: Typical Transfer Characteristics

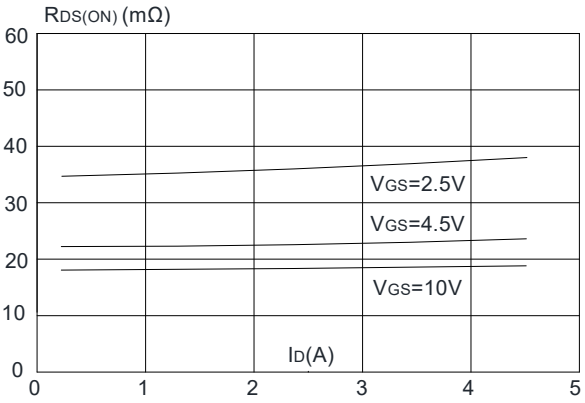


Figure 3: On-resistance vs. Drain Current

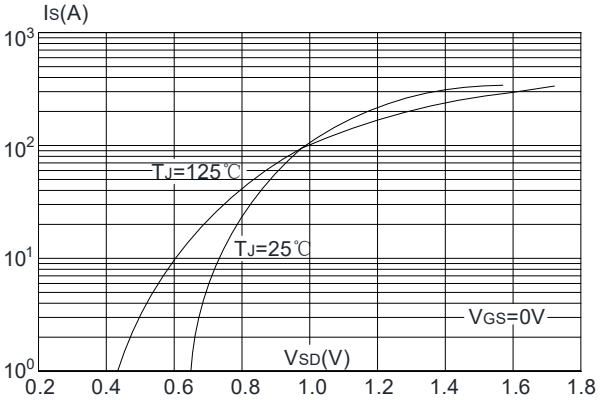


Figure 4: Body Diode Characteristics

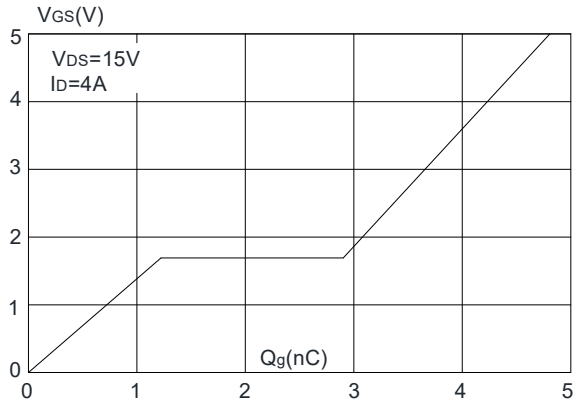


Figure 5: Gate Charge Characteristics

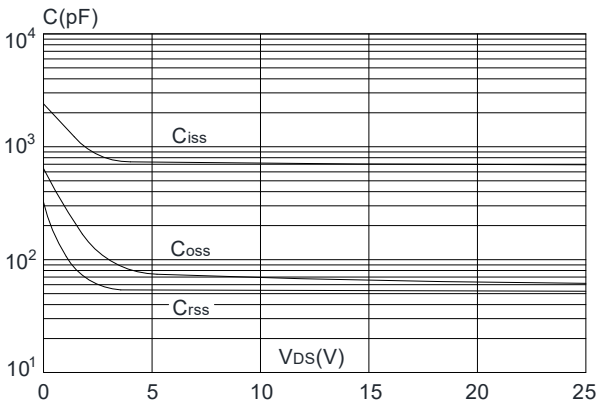


Figure 6: Capacitance Characteristics

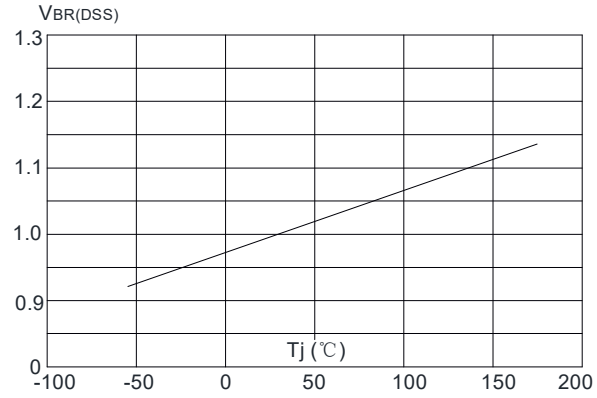


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

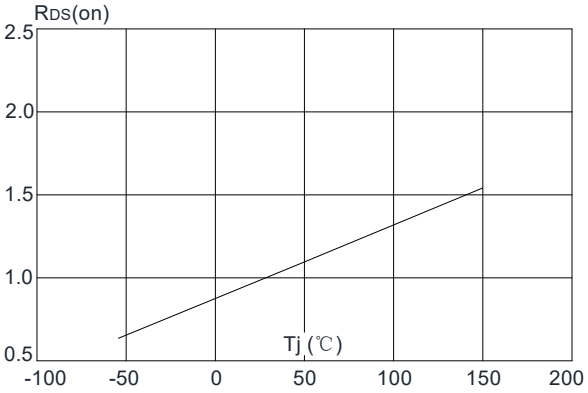


Figure 8: Normalized on Resistance vs. Junction Temperature

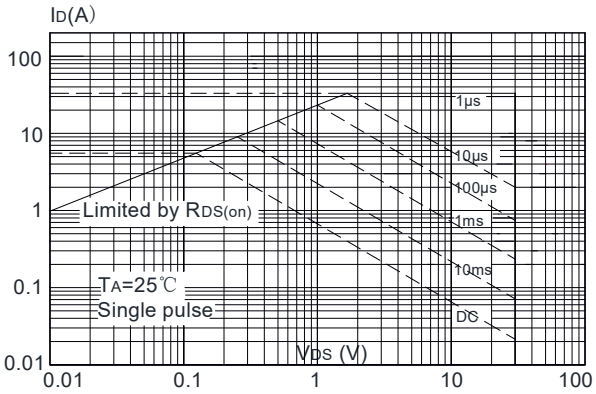


Figure 9: Maximum Safe Operating Area

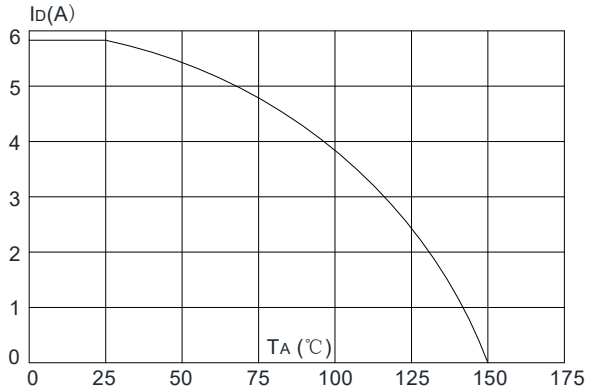


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

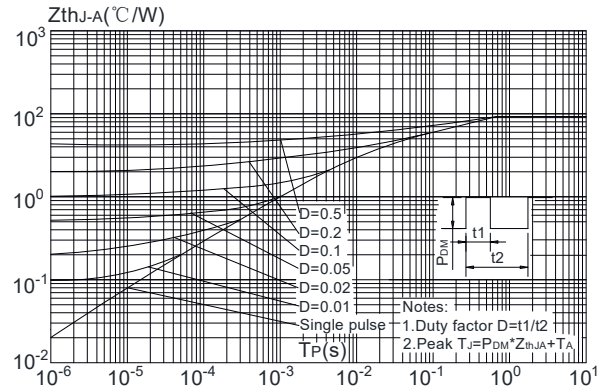
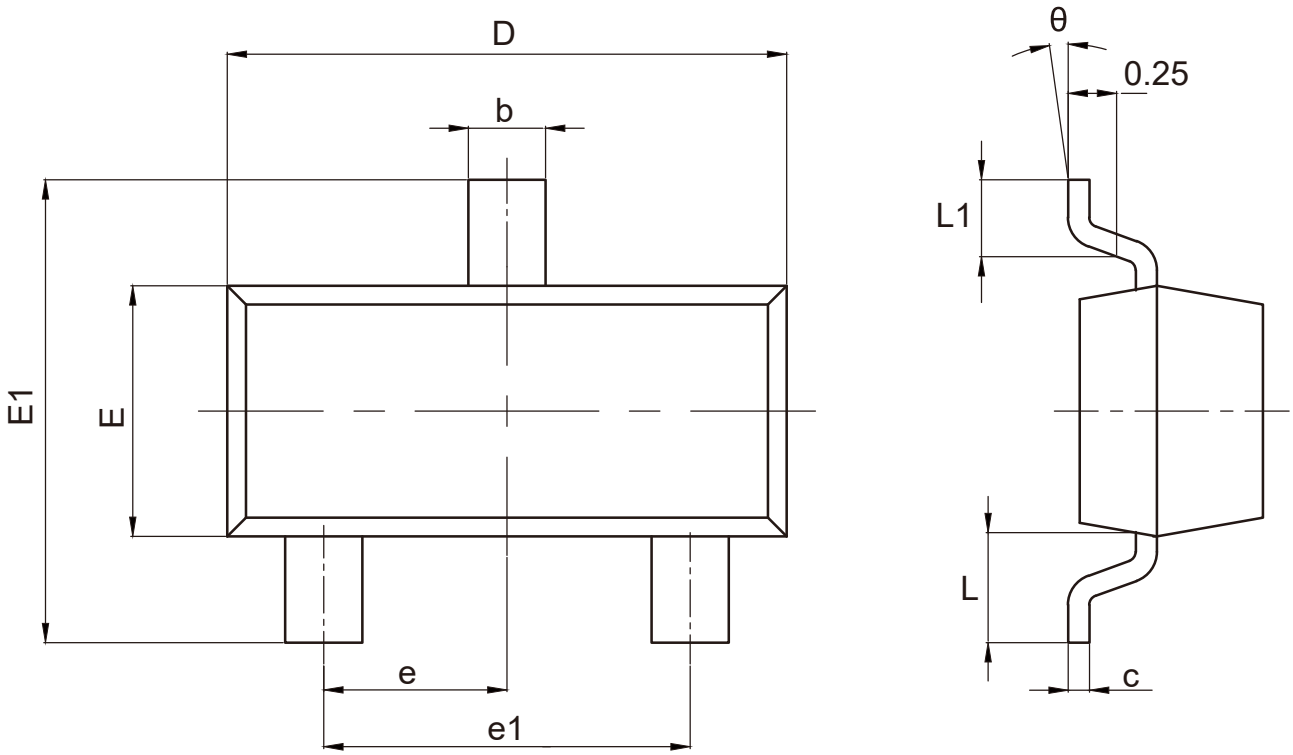
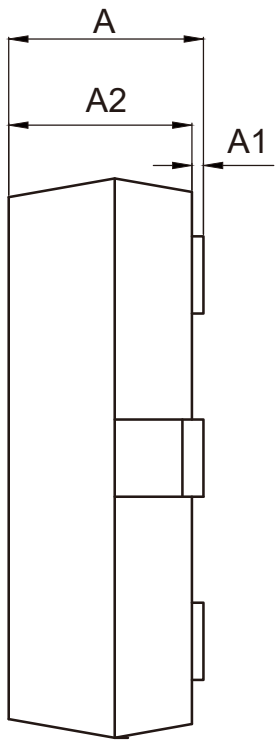


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient

SOT-23 Package Outline Data

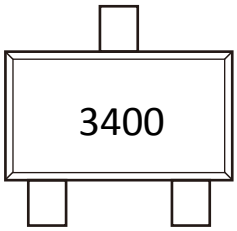




COMMON DIMENSIONS CUNITS MEASURE=MILLIMETER			
SYMBOL	MIN	NOM	MAX
A	0.900	--	1.150
A1	0.000	--	0.100
A2	0.900	--	1.050
c	0.100	--	0.200
b	0.300	0.400	0.500
D	2.800	2.900	3.000
E	1.200	--	1.400
E1	2.250	--	2.550
e	0.950TYP		
e1	1.800	1.900	2.000
L	0.550REF		
L1	0.300	0.400	0.500
θ	0°	--	8°

Unit:mm

Marking Information：



Previous Version

Version	Date	Subjects (major changes since last revision)
2.0	2024-03-06	Release of final version

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