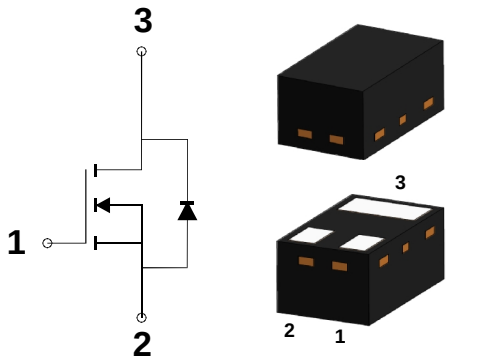
SDV301N3

POWER MOSFET WAFER DATASHEET

Feature

- 30V N-Channel MOSFET High Dense Design.
- $R_{DS(ON)}$ =300mΩ(typ.) @ V_{GS}= 4.5V
- $R_{DS(ON)}$ =400mΩ(typ.) @ V_{GS}= 2.5V
- Reliable and Rugged
- ESD Protected



SOT-883 (DFN1006-3)

Applications

- Portable Equipment and Battery Power Systems

1. Absolute Maximum Ratings (T_A=25°C Unless Otherwise Noted)

Symbol	Parameter	Rating	Unit
V_{DSS}	Drain-Source Voltage	30	V
V_{GSS}	Gate-Source Voltage	±12	
I_D	Continue Drain Current	0.75	A
I_{DM}	Pulsed Drain Current	3	
I_S	Diode Continuous Forward Current	0.7	A
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-55 to 150	
$R_{\theta JA}$*	Thermal Resistance-Junction to Ambient(DFN2x2)	80	°C/W

2. Static Electrical Characteristics (T_A=25°C Unless Otherwise Noted)

Symbol	Parameter	Test Condition	SKA30NC00AE			Unit
			Min.	Typ.	Max.	
Static Characteristics*						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_{DS}=250μA	30			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=24V, V_{GS}=0V			1	μA
		T_J=85°C			30	
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_{DS}=250μA	0.5	0.85	1.2	V
I_{GSS}	Gate Leakage Current	V_{GS}=±10V, V_{DS}=0V			±20	μA
$R_{DS(ON)}$	Drain-Source On-state Resistance	V_{GS}=4.5V, I_{DS}=0.5A		300	400	mΩ
		V_{GS}=2.5V, I_{DS}=0.5A		400	600	
V_{SD}	Diode Forward Voltage	I_{SD}=0.5A, V_{GS}=0V		0.7	1.3	V

*Note:
a : Current maybe limit by bonding wire.
b : The $R_{\Theta JC}$ is the sum of the thermal impedance from junction to ambient and depend on package type.
c : MOS static characteristics test by wafer level(CP).

N-Channel Typical Characteristics

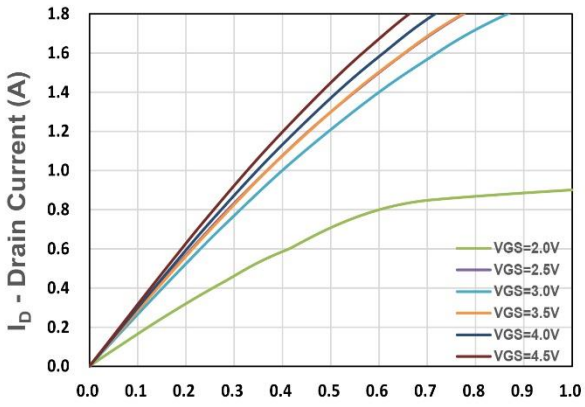


Figure 1. Output Characteristics

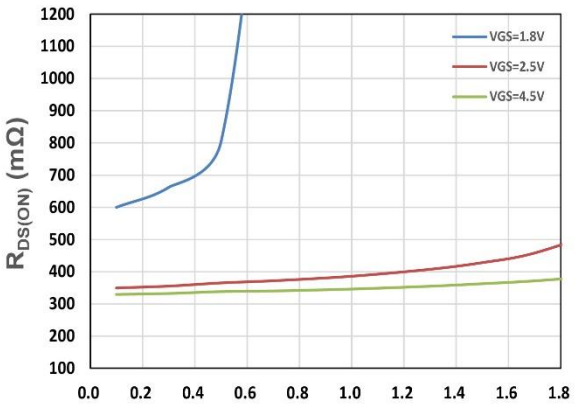


Figure 2. On-Resistance vs. ID

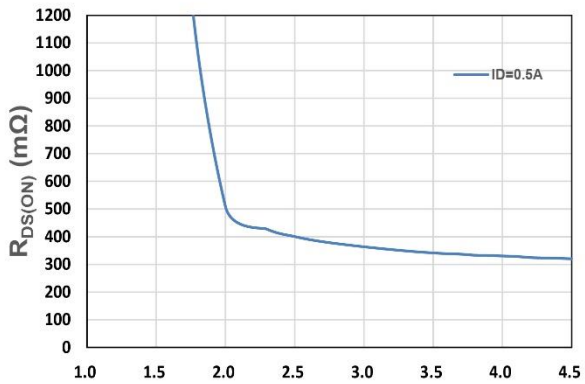


Figure 3. On-Resistance vs. VGS

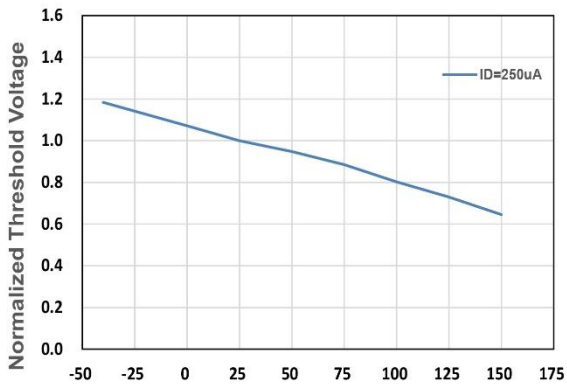


Figure 4. Gate Threshold Voltage

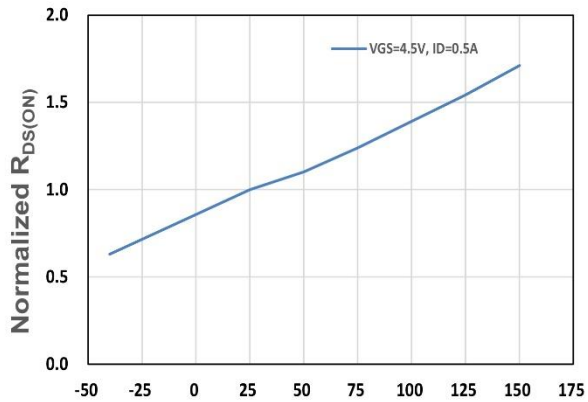


Figure 5. Drain-Source On Resistance

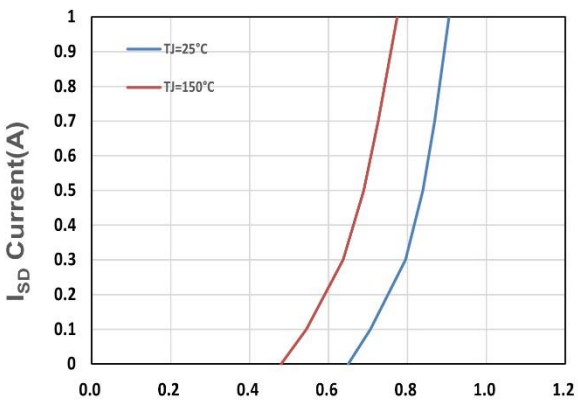
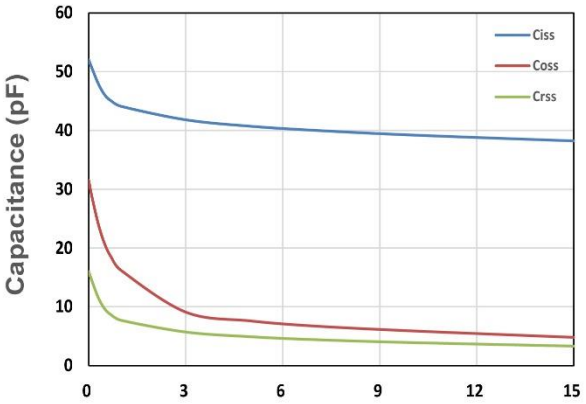
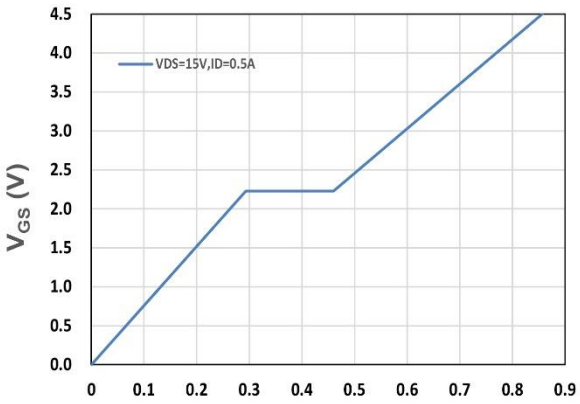


Figure 6. Source-Drain Diode Forward



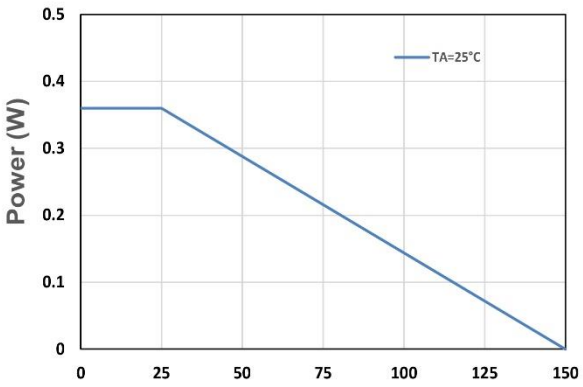
V_{DS} - Drain - Source Voltage (V)

Figure 7. Capacitance



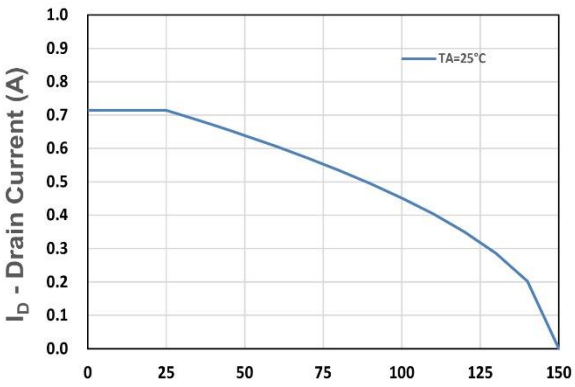
Qg, Total Gate Charge (nC)

Figure 8. Gate Charge Characteristics



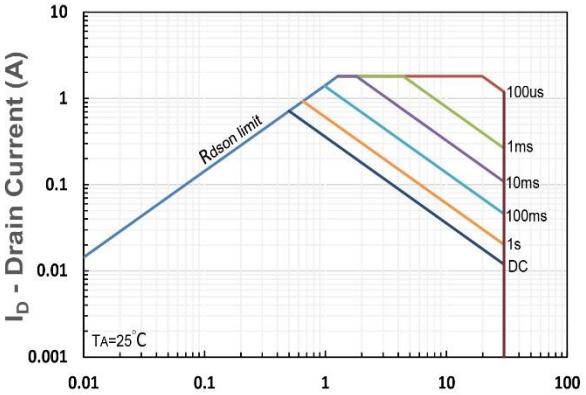
T_A - Junction Temperature (°C)

Figure 9. Power Dissipation



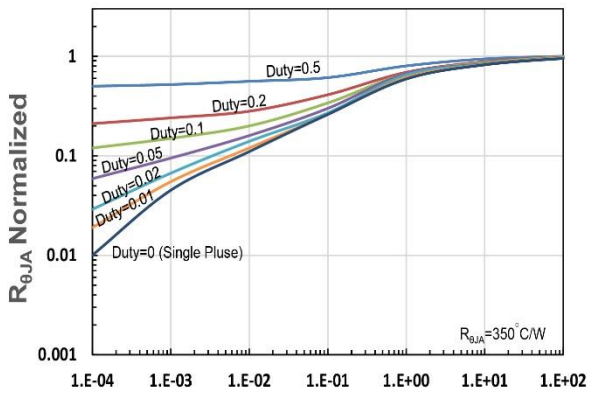
T_A - Junction Temperature (°C)

Figure 10. Drain Current



V_{DS} - Drain-Source Voltage (V)

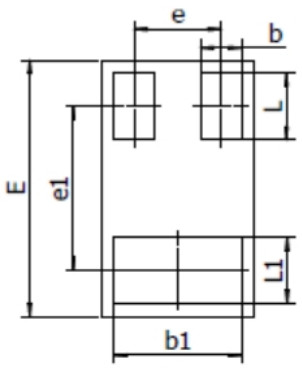
Figure 11. Safe Operating Area

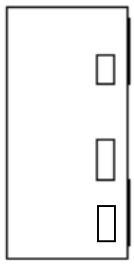


t_1,Square Wave Pulse Duration(s)

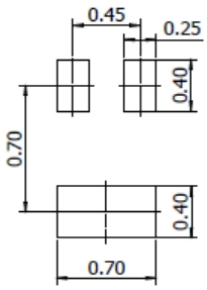
Figure 12. RθJA Transient Thermal Impedance

SOT-883（DFN1006-3） Package Outline





Typical Soldering Pattern(mm):



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.46	0.50	0.018	0.020
A1	---	0.03	---	0.001
D	0.55	0.65	0.022	0.026
E	0.95	1.05	0.037	0.041
b	0.12	0.22	0.005	0.008
b1	0.45	0.55	0.018	0.022
L	0.22	0.32	0.008	0.013
L1	0.22	0.32	0.008	0.013
e	Typ. 0.34		Typ. 0.013	
e1	Typ. 0.65		Typ. 0.026	