Elektronische Bauelemente

SSD30P06-45D

P-Ch Enhancement Mode Power MOSFET

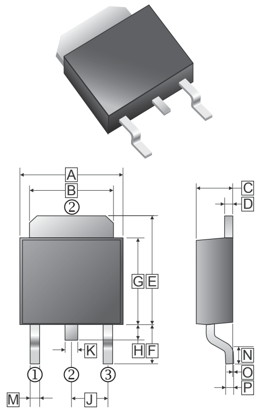
28A, -60V, $R_{DS(ON)}$ 49mΩ

RoHS Compliant Product
A suffix of “-C” specifies halogen free

DESCRIPTION

These miniature surface mount MOSFETs utilize high cell density process. Low $R_{DS(on)}$ assures minimal power loss and conserves energy, making this device ideal for use in power management circuitry. Typical applications are PWMDC-DC converters, power management in portable and battery-powered products such as computers, printers, battery charger, telecommunication power system, and telephones power system.

TO-252(D-Pack)



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	6.4	6.8	J	2.30 REF.	
B	5.20	5.50	K	0.70	0.90
C	2.20	2.40	M	0.50	1.1
D	0.45	0.58	N	0.9	1.6
E	6.8	7.3	O	0	0.15
F	2.40	3.0	P	0.43	0.58
G	5.40	6.2			
H	0.8	1.20			

FEATURES

- Low $R_{DS(on)}$ provides higher efficiency and extends battery life.
- Miniature TO-252 surface mount package saves board space.
- High power and current handling capability.
- Extended V_{GS} range (±25) for battery pack applications.

PRODUCT SUMMARY

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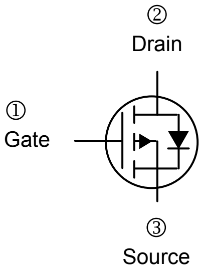
V_{DS}(V)	R_{DS}(on) m(Ω)	I_D(A)
-60	49@V_{GS}= -10V	28
	60@V_{GS}= -4.5V	24



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current [a]	I_D @T_A=25℃	61	A
Pulsed Drain Current [b]	I_{DM}	±40	A
Continuous Source Current (Diode Conduction) [a]	I_S	-30	A
Total Power Dissipation [a]	P_D @T_A=25℃	50	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 ~ 175	°C
THERMAL RESISTANCE RATINGS			
Maximum Thermal Resistance Junction-Ambient [a]	$R_{\theta JA}$	50	°C / W
Maximum Thermal Resistance Junction-Case	$R_{\theta JC}$	3.0	°C / W

Notes：

a. Surface Mounted on 1” x 1” FR4 Board.

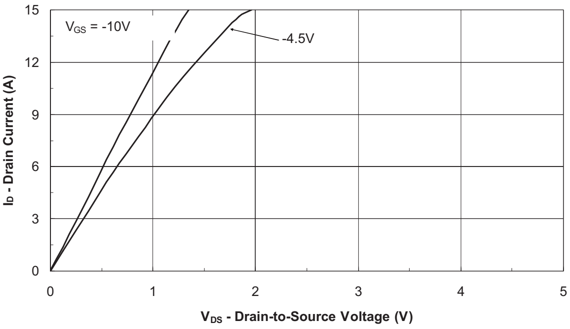
b. Pulse width limited by maximum junction temperature.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

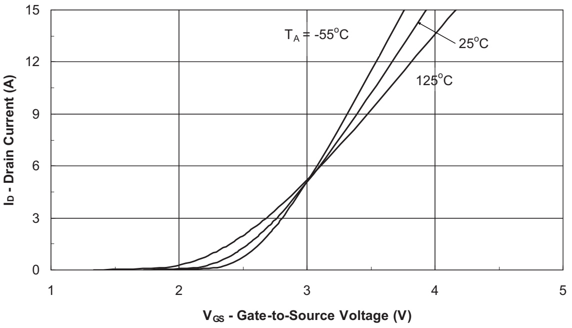
PARAMETER	SYMBO	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Static						
Gate-Threshold Voltage	$V_{GS(th)}$	-1	-	-		V_{DS}= $V_{GS,}$ I_D = -250 μA
Gate-Body Leakage	I_{GSS}	-	-	±100	nA	V_{DS} = 0V, V_{GS}= ±20V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	-1	μA	V_{DS}= -48V, V_{GS}= 0V
		-	-	-10		V_{DS}= -48V, V_{GS}=0V, T_J=55°C
On-State Drain Current [a]	$I_{D(on)}$	-20	-	-	A	V_{DS} = -5V, V_{GS}= -10V
Drain-Source On-Resistance [a]	$R_{DS(ON)}$	-	-	49	mΩ	V_{GS}= -10V, I_D= -28A
		-	-	60		V_{GS}= -4.5V, I_D= -24A
Forward Transconductance [a]	g_{fs}	-	8	-	S	V_{DS}= -15V, I_D= -28A
Diode Forward Voltage	V_{SD}	-	-	-1.2	V	I_S= -2.5 A, V_{GS}= 0 V
Dynamic [b]						
Total Gate Charge	Q_g	-	18	-	nC	V_{DS} = -30 V V_{GS} = -4.5 V I_D = -28 A
Gate-Source Charge	Q_{gs}	-	5	-		
Gate-Drain Charge	Q_{gd}	-	2	-		
Turn-on Delay Time	$T_{d(on)}$	-	8	-	nS	V_{DD}= -30 V I_D= -1 A V_{GEN} = -10 V R_L= 30 Ω R_G= 6 Ω
Rise Time	T_r	-	10	-		
Turn-off Delay Time	$T_{d(off)}$	-	35	-		
Fall Time	T_f	-	12	-		

Notes
a. Pulse test：Pulse width ≦ 300 μs, duty cycle ≦ 2%.
b. Guaranteed by design, not subject to production testing.

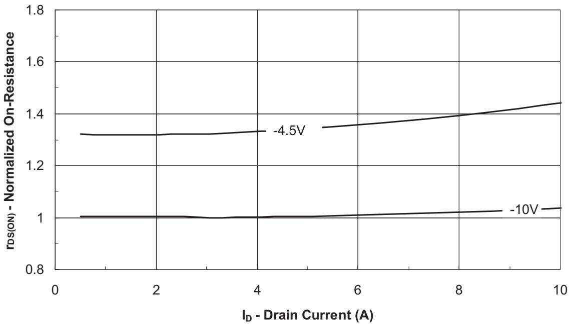
CHARACTERISTIC CURVE



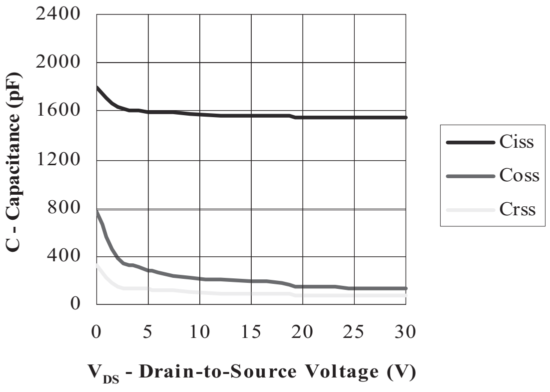
Output Characteristics



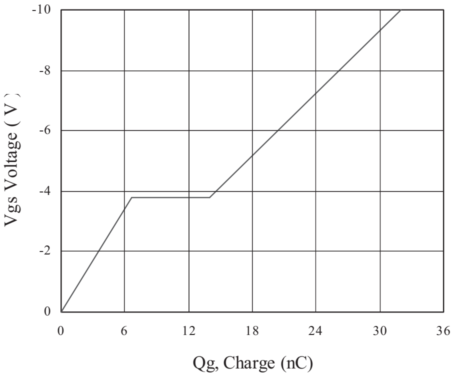
Transfer Characteristics



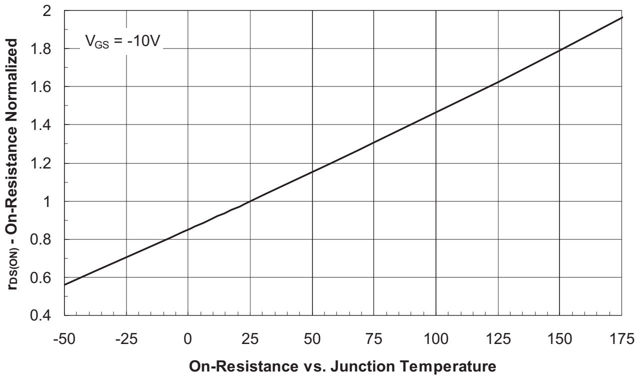
On-Resistance vs. Drain Current



Capacitance

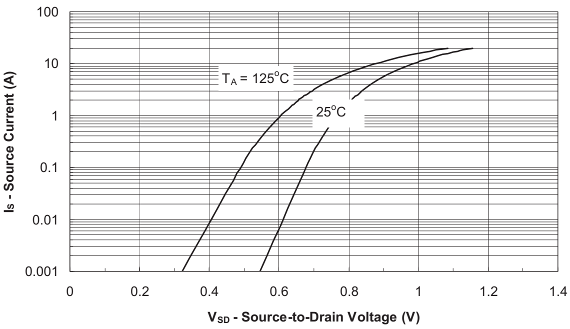


Gate Charge

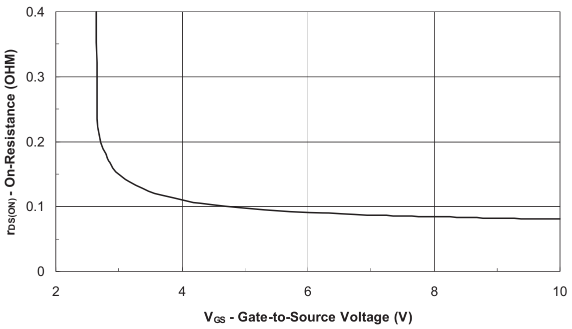


On-Resistance vs. Junction Temperature

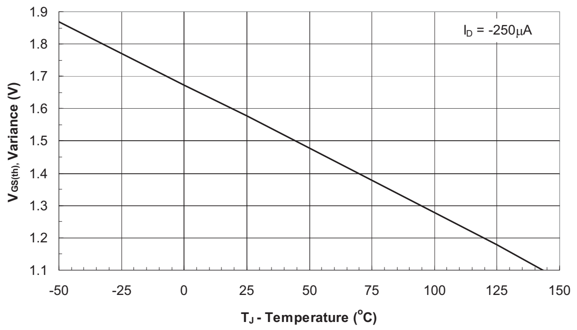
CHARACTERISTIC CURVE



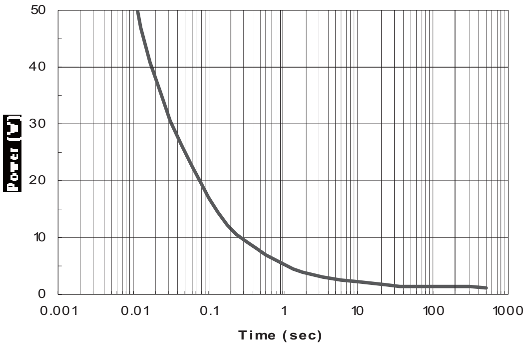
Source-Drain Diode Forward Voltage



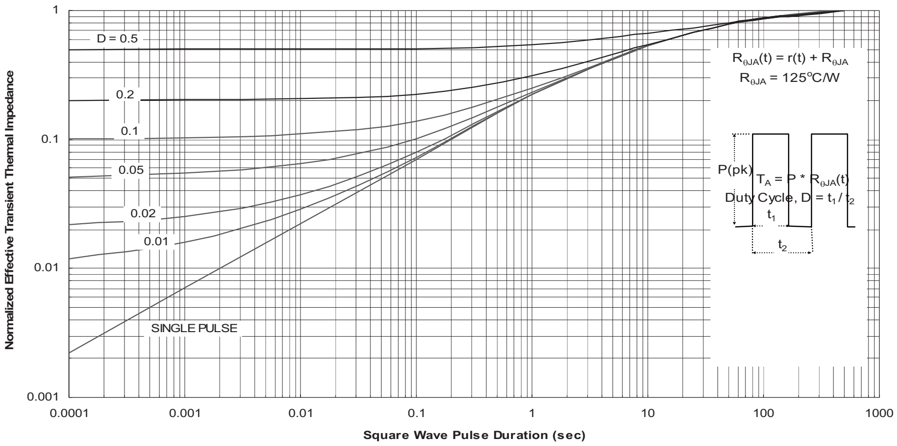
On-Resistance vs.Gate-to Source Voltage



Threshold Voltage



Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Ambient