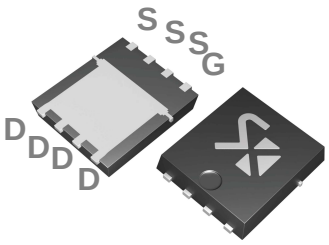
SK05N50AD

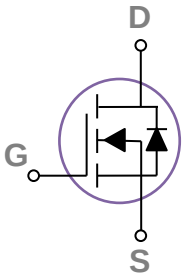
500V N-Channel MOSFET

BV_{DSS}	$R_{DS(ON),typ.}$	I_D
500V	1.43Ω	5A

General Description

These N-Channel enhancement mode power field effect transistors are using trench DMOS technology. This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode. These devices are well suited for high efficiency fast switching applications.





Features

- 500V, 5A, $R_{DS(ON)}$ =1.6Ω(Max.)@V_{GS}=10V

Application

- LED power supplies
- Cell Phone Charger
- Standby Power

ABSOLUTE MAXIMUM RATINGS (T_C = 25 °C Unless Otherwise Noted)

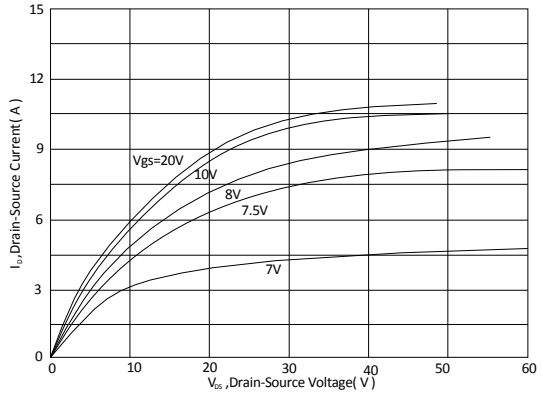
Symbol	Parameter	Rating	Unit
V_{DSS}	Drain-Source Voltage	500	V
V_{GSS}	Gate-Source Voltage	±30	
I_D	Continue Drain Current	5	A
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-55 to 150	

Electric Characteristics (T_C = 25 °C Unless Otherwise Noted)

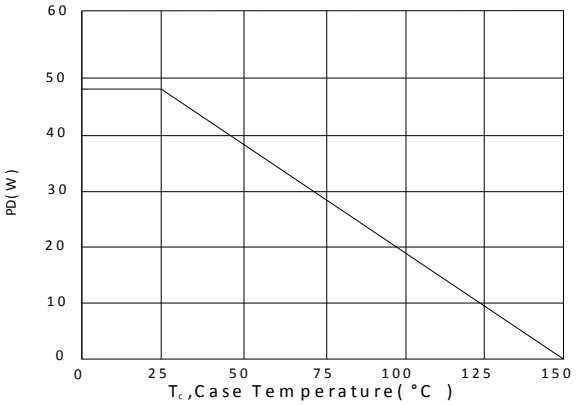
Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=250uA	500	--	--	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V, I_D=1A	--	1.43	1.6	Ω
$V_{GS(th)}$	Gate-Source Threshold Voltage	V_{GS}=V_{DS} ,I_D=250uA	2	3.28	4	V
I_{DSS}	Zero Gate Voltage Drain Leakage Current	V_{DS}=500V,V_{GS}=0V	--	--	1	μA
I_{GSS}	Gate-Source Leakage Current	V_{DS}=0V ,V_{GS}=±30V	--	--	±100	nA

TYPICAL CHARACTERISTICS

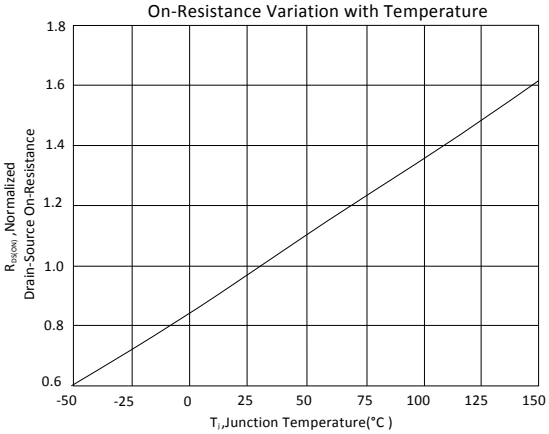
Typical Output Characteristics



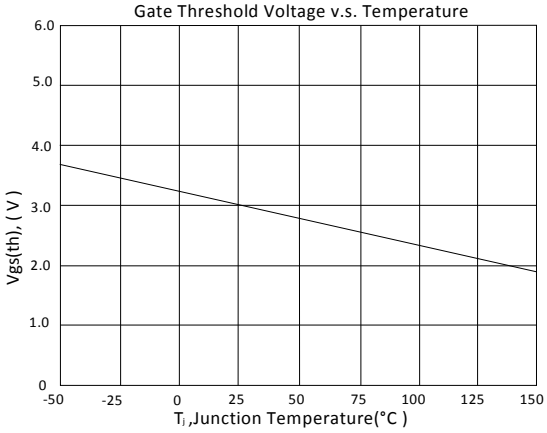
Allowable Power Dissipation



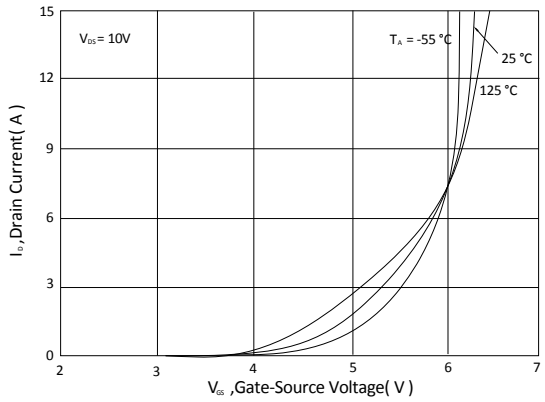
On-Resistance Variation with Temperature



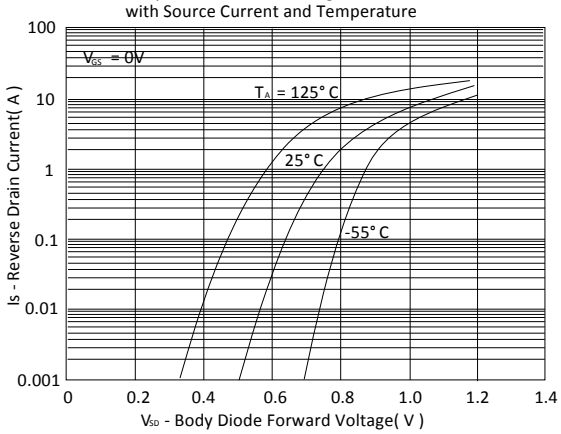
Gate Threshold Voltage v.s. Temperature



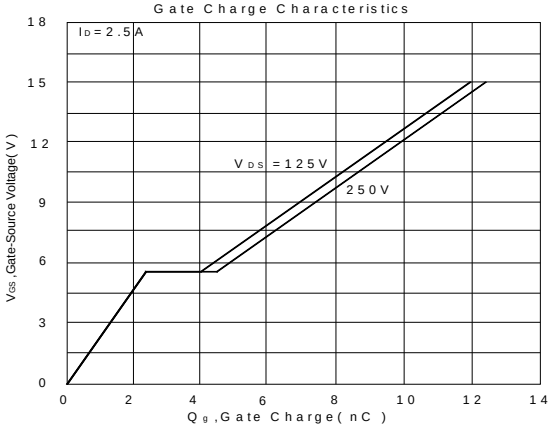
Transfer Characteristics



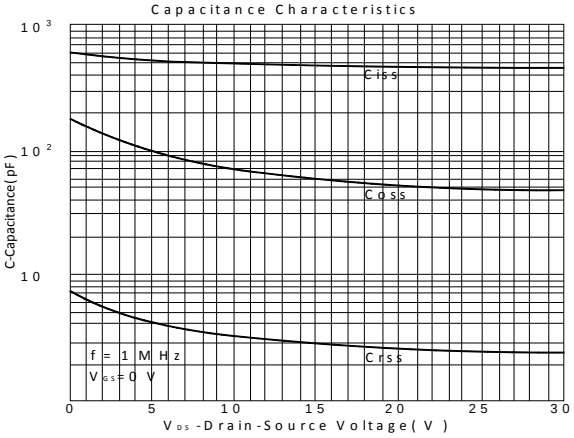
Body Diode Forward Voltage Variation
with Source Current and Temperature



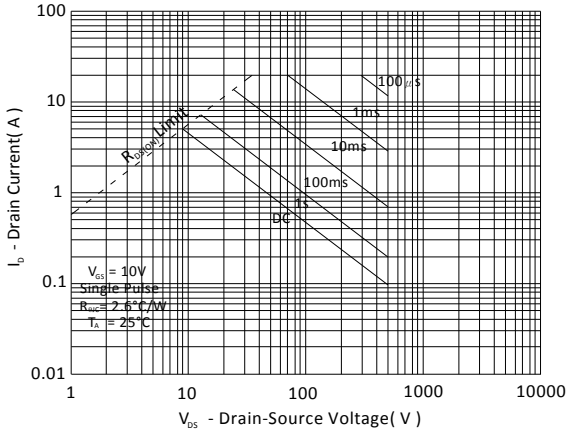
Gate Charge Characteristics



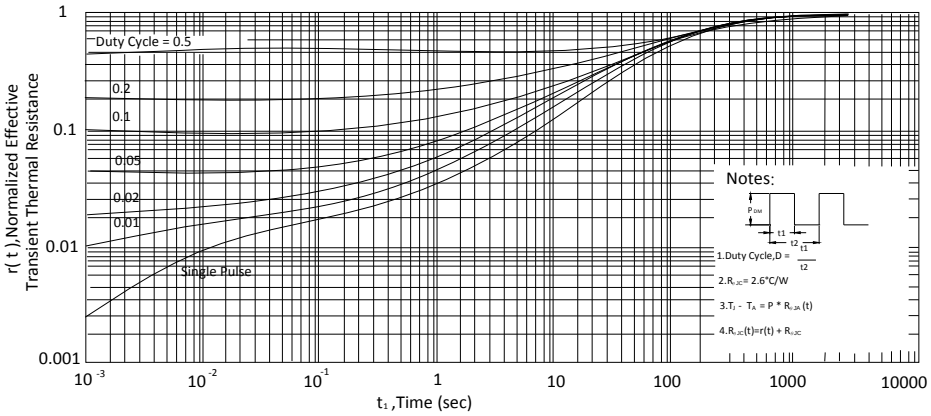
Capacitance Characteristics



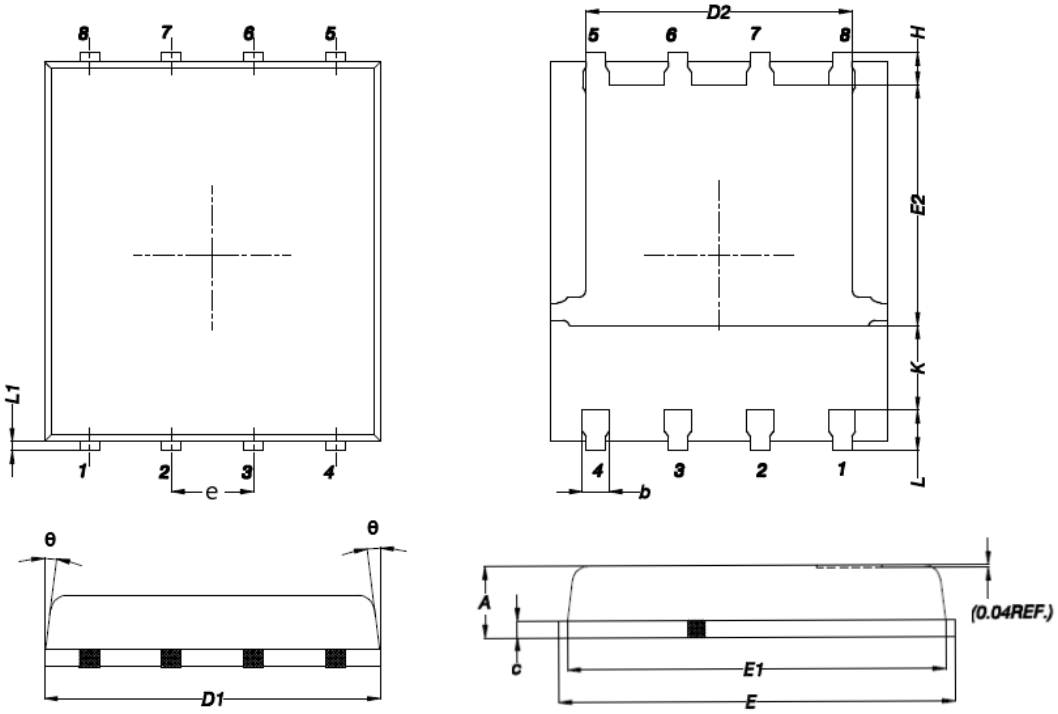
Maximum Safe Operating Area



Transient Thermal Response Curve



PDFN5x6 PACKAGE INFORMATION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MAX	MIN	MAX	MIN
A	1.200	0.850	0.047	0.031
b	0.510	0.300	0.020	0.012
C	0.300	0.200	0.012	0.008
D1	5.400	4.800	0.212	0.189
D2	4.310	3.610	0.170	0.142
E	6.300	5.850	0.248	0.230
E1	5.960	5.450	0.235	0.215
E2	3.920	3.300	0.154	0.130
e	1.27BSC		0.05BSC	
H	0.650	0.380	0.026	0.015
K	---	1.100	---	0.043
L	0.710	0.380	0.028	0.015
L1	0.250	0.050	0.009	0.002
θ	12°	0°	12°	0°