KJ15P03DS

Dual P-Channel Enhancement Mode MOSFET

1. Product Information

1.1 Features

- ☑ Surface-mounted package
- ☑ Low gate charge

1.2 Applications

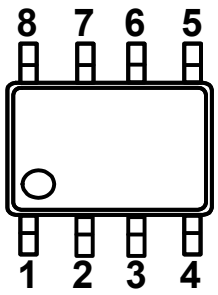
- ☑ Motor driver appliances
- ☑ Adapter appliances
- ☑ High power inverter system

1.3 Quick reference

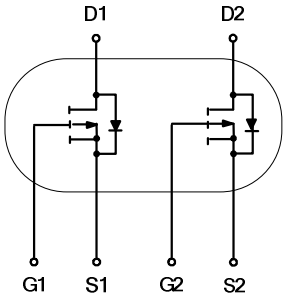
- ☑ BV ≧ - 30 V
- ☑ P_{tot} ≦ 2.2 W
- ☑ I_D ≦ - 10 A
- ☑ $R_{DS(ON)}$ ≦ 18 mΩ @ V_{GS} = - 10 V
- ☑ $R_{DS(ON)}$ ≦ 28 mΩ @ V_{GS} = - 4.5 V

2. Pin Description

Pin	Description	Simplified Outline	Symbol
1	Source(S1)		
2	Gate(G1)		
3	Source(S2)		
4	Gate(G2)		
5,6	Drain(D2)		
7,8	Drain(D1)		



Top View
SOP8



3. Limiting Values

Symbol	Parameter	Conditions	Min	Max	Unit
V_{DS}	Drain-Source Voltage	T_A = 25 ℃	-	- 30	V
V_{GS}	Gate-Source Voltage	T_A = 25 ℃	-	± 20	V
I_D*	Drain Current (DC)	T_A = 25 ℃, V_{GS} = - 10 V	-	- 10	A
		T_A = 100 ℃, V_{GS} = - 10 V		- 5.5	A
I_{DM}*,**	Drain Current (Pulsed)	T_A = 25 ℃, V_{GS} = - 10 V	-	- 34	A
P_{tot}*	Total Power Dissipation	T_A = 25 ℃	-	2.2	W
T_{stg}	Storage Temperature		- 55	150	℃
T_J	Junction Temperature		-	150	℃
I_S	Diode Forward Current	T_C = 25 ℃	-	- 10	A
$R_{\theta JA}$*	Thermal Resistance- Junction to Ambient		-	56.3	℃ / W

4. Marking Information

Product Name	Marking
KJ15P03DS	15P03D YWWXXX YWW: Date Code

5. Ordering Code

Product Name	Package	Reel Size	Tape width	Quantity	Note
KJ15P03DS	SOP8			3000	

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS} = 0 V, I_{DS} = - 250 μA	- 30	-	-	V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_{DS} = - 250 μA	- 1	-	- 2	V
I_{DSS}	Drain Leakage Current	V_{DS} = - 24V, V_{GS} = 0 V	-	-	- 1	μA
I_{GSS}	Gate Leakage Current	V_{GS} = ± 20 V, V_{DS} = 0 V	-	-	± 100	nA
$R_{DS(ON)}$[a]	Channel On-State Resistance	V_{GS} = - 10 V, I_D = - 5A	-	14.5	18	mΩ
	Channel On-State Resistance	V_{GS} = - 4.5 V, I_D = -3A	-	23.5	28	
Diode Characteristics						
V_{SD}[a]	Diode Forward Voltage	I_{SD} = - 5A, V_{GS} = 0 V	-	-	- 1.3	V
t_{rr}	Reverse Recovery Time	I_{SD} = - 5A, dI_{SD} / dt = 100 A / μs	-	12	-	nS
Q_{rr}	Reverse Recovery Charge		-	6.2	-	nC
Dynamic Characteristics[b]						
C_{iss}	Input Capacitance	V_{GS} = 0 V, V_{DS} = - 15V Frequency = 1 MHz	-	1953	-	pF
C_{oss}	Output Capacitance		-	175	-	
C_{rss}	Reverse Transfer Capacitance		-	146	-	
t_d(on)	Turn-on Delay Time	V_{DS} = - 15V, V_{GEN} = - 10 V, R_G = 3.9 Ω, R_L = 3Ω, I_{DS} = - 5A	-	5.7	-	nS
t_r	Turn-on Rise Time		-	15	-	
t_d(off)	Turn-off Delay Time		-	117	-	
t_f	Turn-off Fall Time		-	40	-	
Gate Charge Characteristics[b]						
Q_g	Total Gate Charge	V_{GS} = - 10 V, V_{DS} = - 15V, I_{DS} = - 5A	-	33	-	nC
Q_{gs}	Gate-Source Charge		-	8.4	-	
Q_{gd}	Gate-Drain Charge		-	3.7	-	

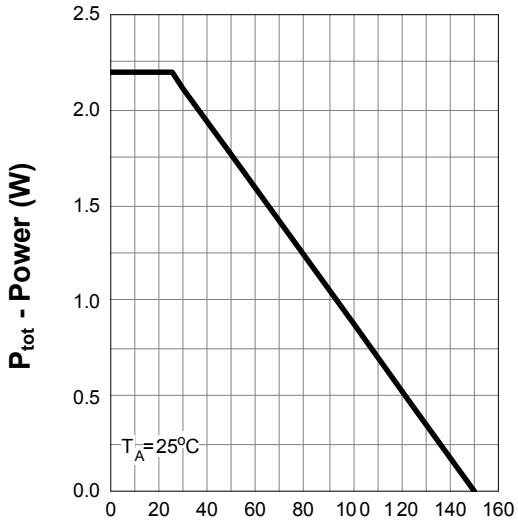
Notes：

a : Pulse test ; pulse width ≤ 300 μs, duty cycle ≤ 2 %

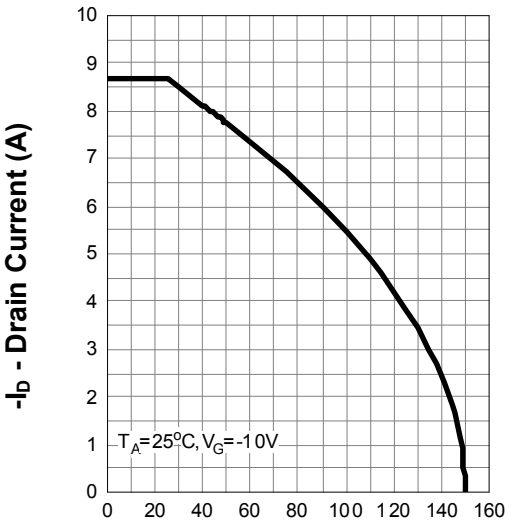
b : Guaranteed by design, not subject to production testing

7. Typical Characteristics

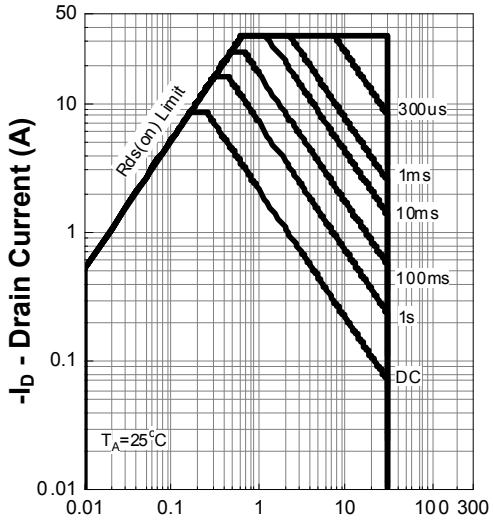
Power Dissipation



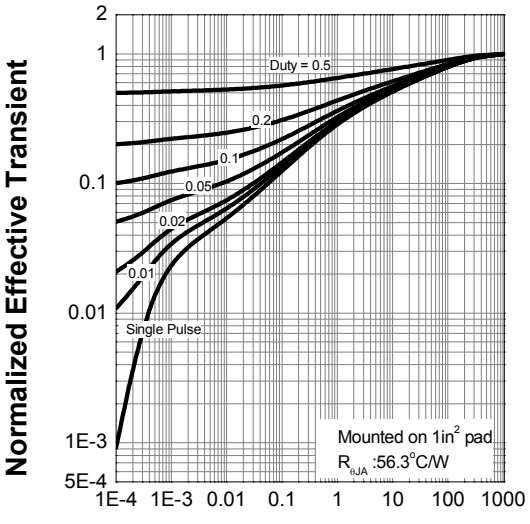
Drain Current



Safe Operation Area

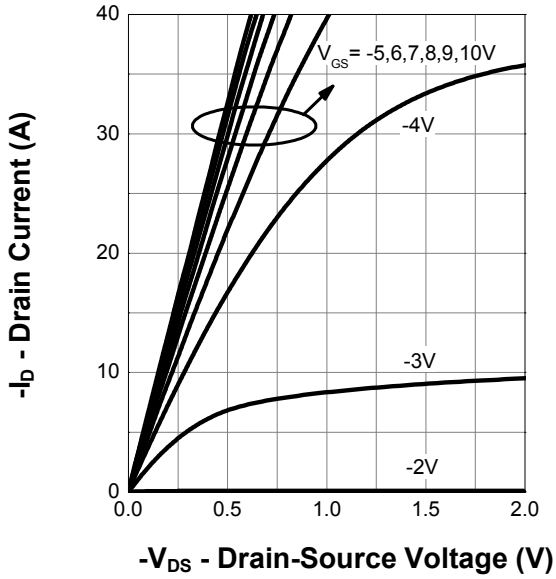


Thermal Transient Impedance

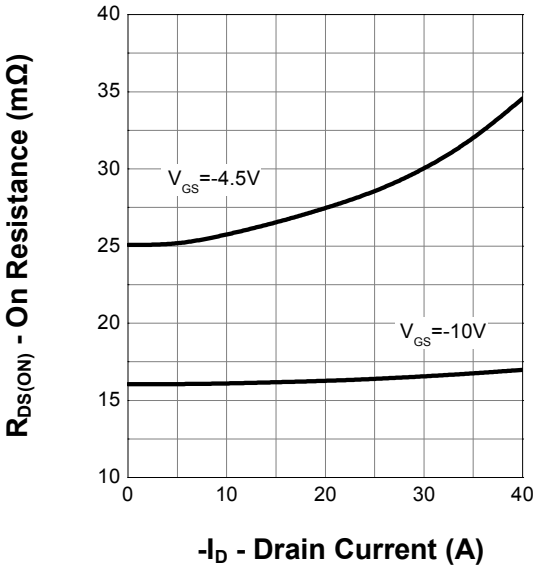


7. Typical Characteristics (cont.)

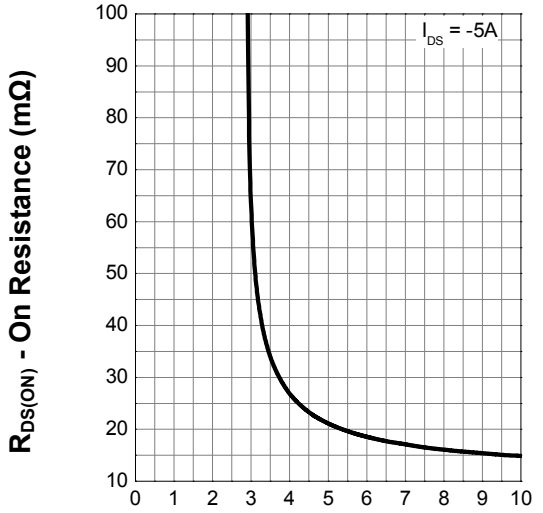
Output Characteristics



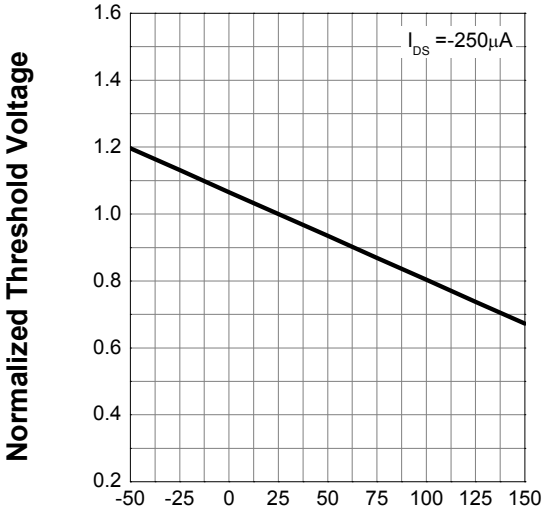
Drain-Source On Resistance



Transfer Characteristics

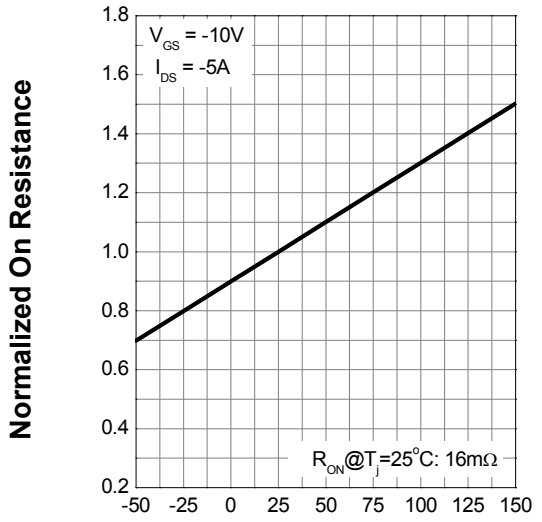


Gate Threshold Voltage

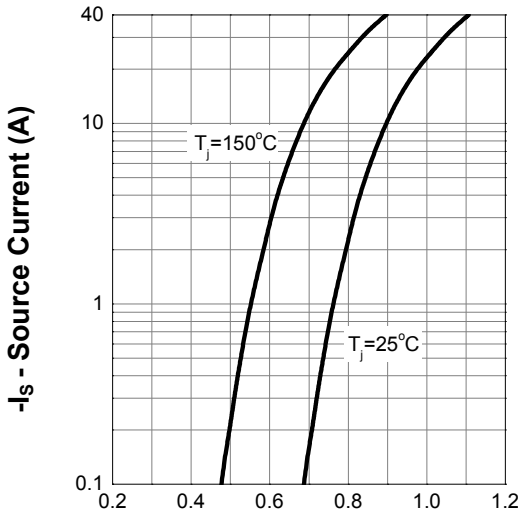


7. Typical Characteristics (cont.)

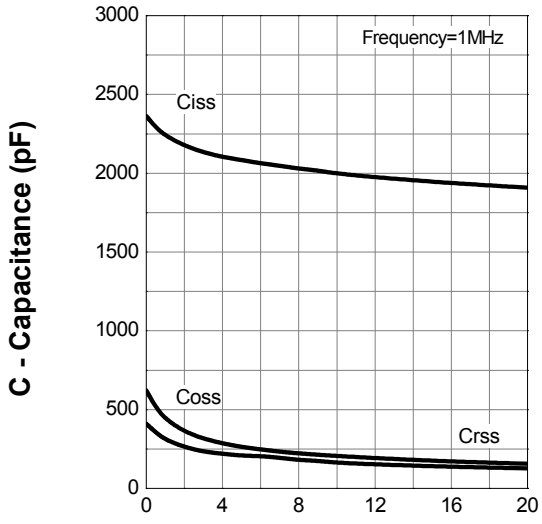
Drain-Source On Resistance



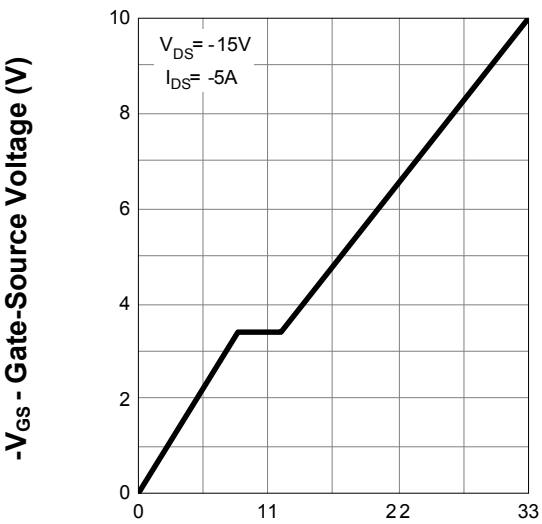
Source-Drain Diode Forward



Capacitance

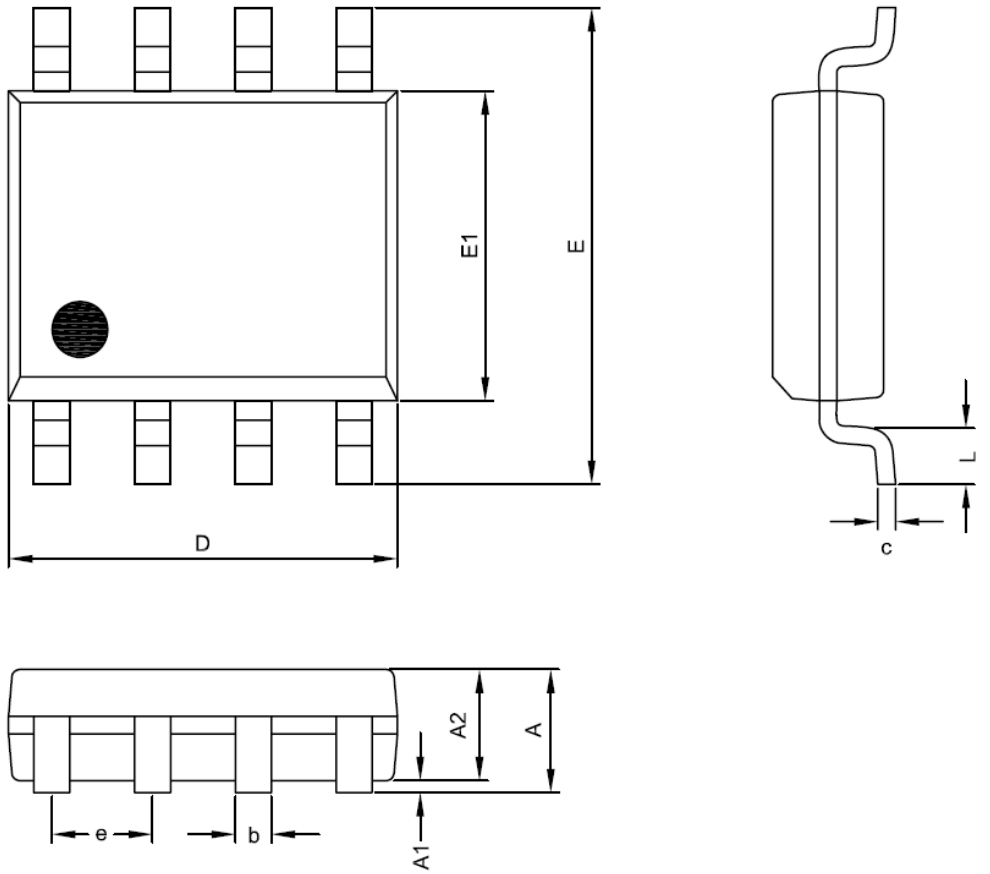


Gate Charge



8. Package Dimensions

SOP8



Symbol	Dimensions In Millimeters	
	MIN.	MAX.
A	1.35	1.75
A1	0.00	0.25
A2	1.15	1.50
D	4.80	5.00
E	5.80	6.20
E1	3.80	4.00
c	0.19	0.27
b	0.33	0.53
e	1.27 BSC	
L	0.40	1.27

Notes：

1. Jedec outline ： MS-012AA
2. Dimensions “ D ” does not include mold flash, protrusions and gate burrs shall not exceed .15 mm (.006 in) per side .
3. Dimensions “ E1 ” does not include inter-lead flash, or protrusions. Inter-lead flash and protrusions shall not exceed .25 mm (.010 in) per side.