Dual P-Channel Enhancement Mode Power MOSFET

Features:

The KWDP4953Q8 is a P-channel enhancement-mode MOSFET, providing the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost effectiveness. The SOP-8 package is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

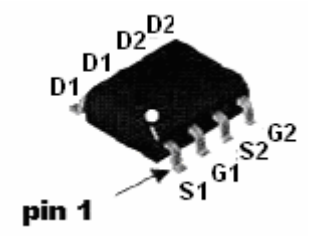
Applications:

- Power management in notebook computer, portable equipment and battery powered systems.

BV_{DSS}	**-30V**
I_D	**-5.3A**
R_{DSON}@V_{GS}=-10V, I_D=-5A	**50mΩ (typ)**
R_{DSON}@V_{GS}=-4.5V, I_D=-4A	**75mΩ (typ)**

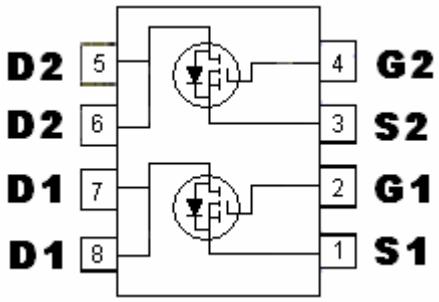
Outline

SOP-8



Equivalent Circuit

KWDP4953Q8



G：Gate S：Source D：Drain

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current @T_A=25 °C (Note 1)	I_D	-5.3	A
Continuous Drain Current @T_A=70 °C (Note 1)	I_D	-4.2	A
Pulsed Drain Current (Note 2)	I_{DM}	-20	A
Total Power Dissipation (Note 1)	Pd	2	W
Linear Derating Factor		0.02	W / °C
Operating Junction and Storage Temperature Range	Tj ; Tstg	-55~+150	°C
Thermal Resistance, Junction-to-Ambient (Note 1)	Rth,ja	62.5	°C/W

Note : 1.Surface mounted on 1 in²copper pad of FR-4 board, t≤10s.
2.Pulse width ≤300μs, duty cycle≤2%

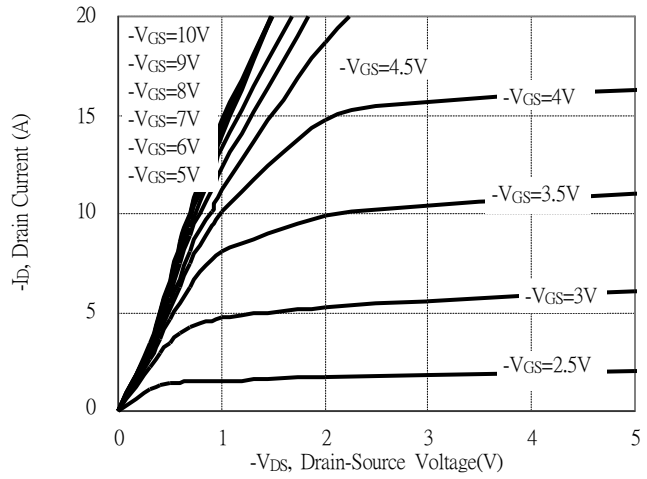
Electrical Characteristics (Tj=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV_{DSS}	-30	-	-	V	V_{GS}=0, I_D=-250μA
$V_{GS(th)}$	-1	-1.5	-2.5	V	V_{DS}=V_{GS}, I_D=-250μA
I_{GSS}	-	-	±100	nA	V_{GS}=±20V, V_{DS}=0
I_{DSS}	-	-	-1	μA	V_{DS}=-24V, V_{GS}=0
*$R_{DS(ON)}$	-	50	60	mΩ	I_D=-5A, V_{GS}=-10V
	-	75	90		I_D=-4A, V_{GS}=-4.5V
*G_{FS}	-	7	-	S	V_{DS}=-5V, I_D=-5A
Dynamic					
Ciss	-	647	-	pF	V_{DS}=-15V, V_{GS}=0, f=1MHz
Coss	-	68	-		
Crss	-	59	-		
*$t_{d(ON)}$	-	7	-	ns	V_{DS}=-15V, I_D=-1A, V_{GS}=-10V, R_G=3.3Ω
*t_r	-	3	-		
*$t_{d(OFF)}$	-	20	-		
*t_f	-	15	-		
*Qg	-	11	-	nC	V_{DS}=-15V, I_D=-5.3A, V_{GS}=-10V
*Qgs	-	2.3	-		
*Qgd	-	4.3	-		
Source-Drain Diode					
*V_{SD}	-	-0.84	-1.2	V	V_{GS}=0V, I_S=-1.7A

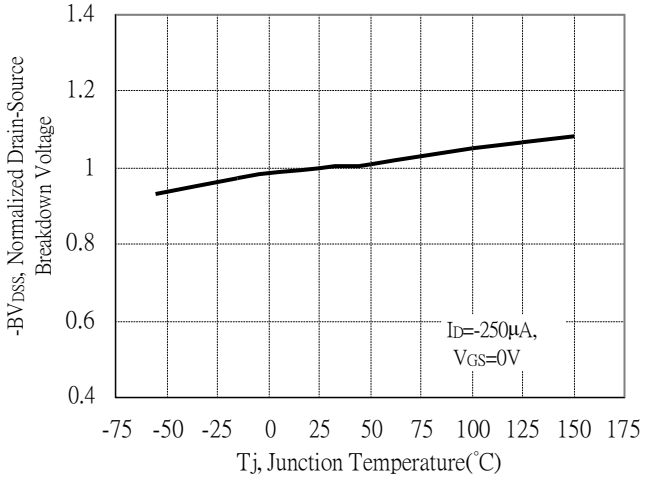
*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

Typical Characteristics

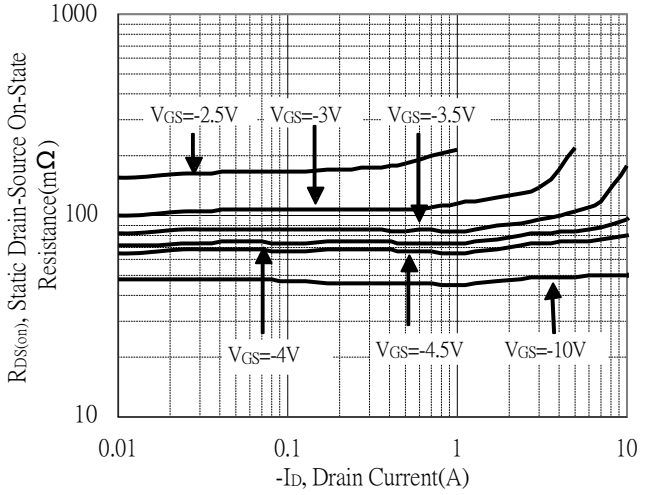
Typical Output Characteristics



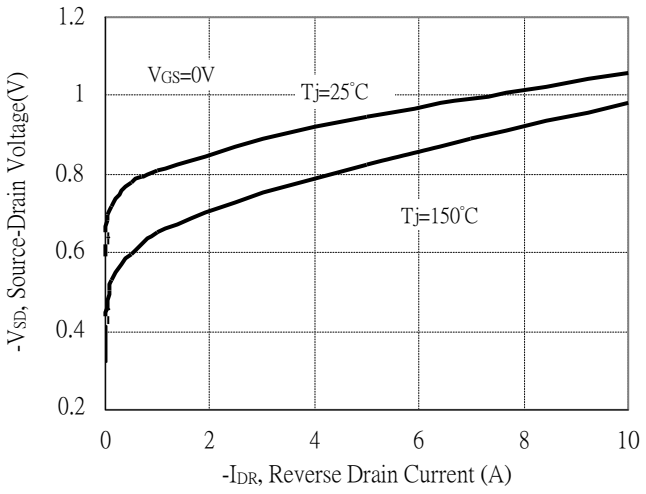
Brekdown Voltage vs Ambient Temperature



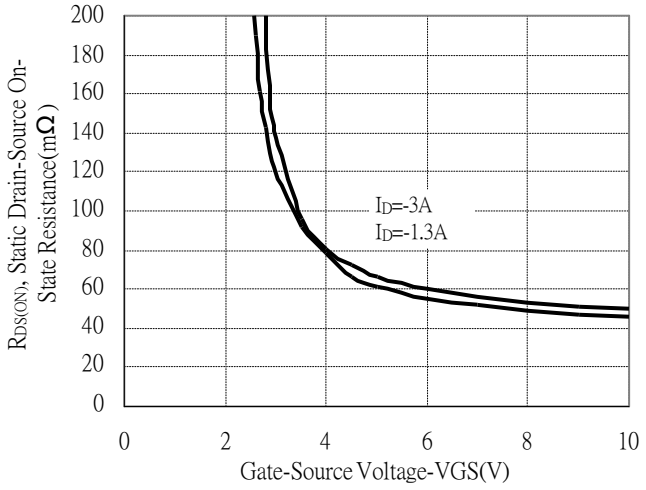
Static Drain-Source On-State resistance vs Drain Current



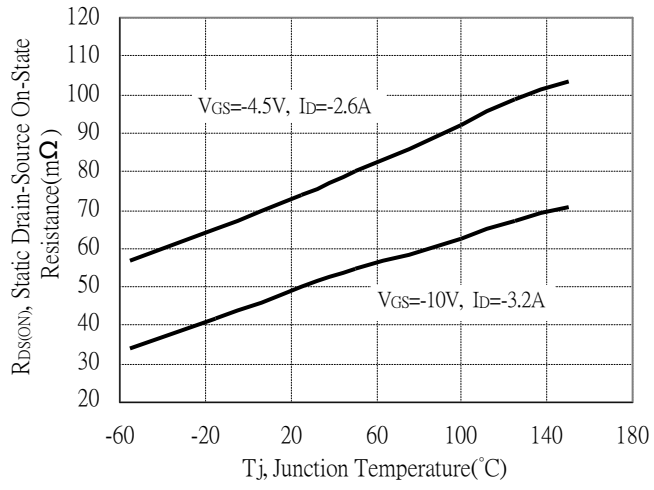
Reverse Drain Current vs Source-Drain Voltage



Static Drain-Source On-State Resistance vs Gate-Source Voltage

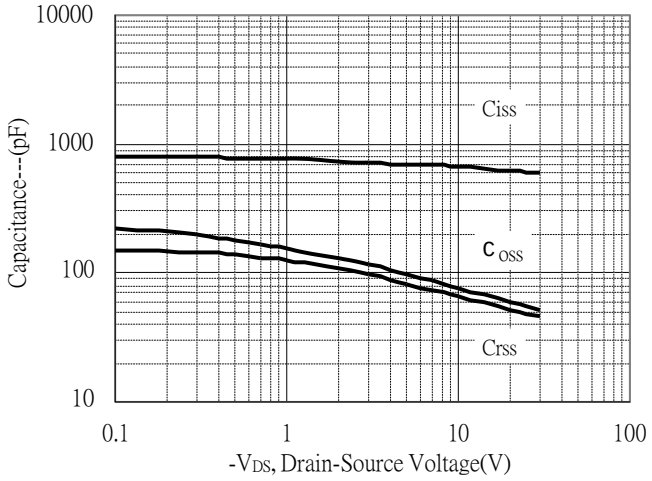


Drain-Source On-State Resistance vs Junction Tempearture

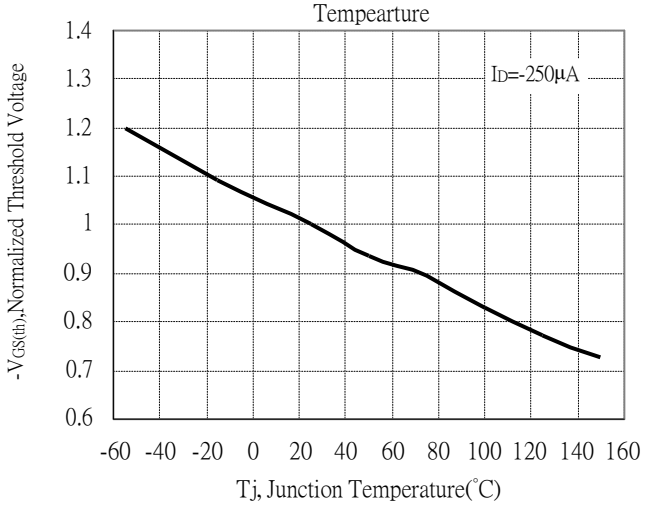


Typical Characteristics (Cont.)

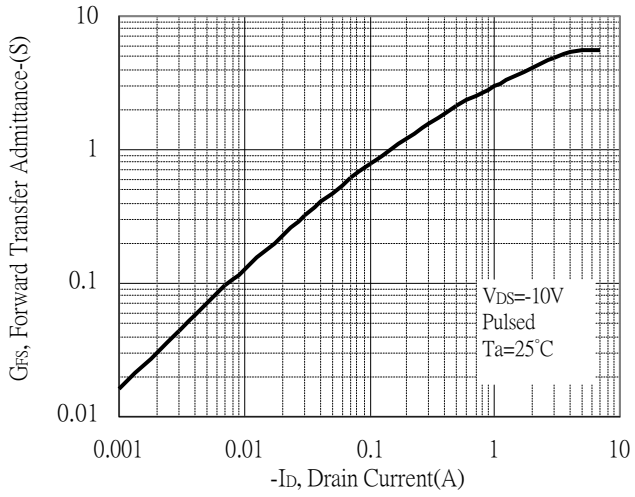
Capacitance vs Drain-to-Source Voltage



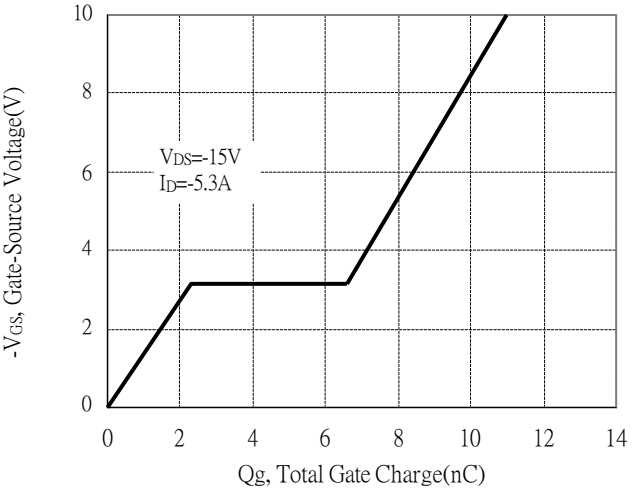
Normalized Threshold Voltage vs Junction Tempearture



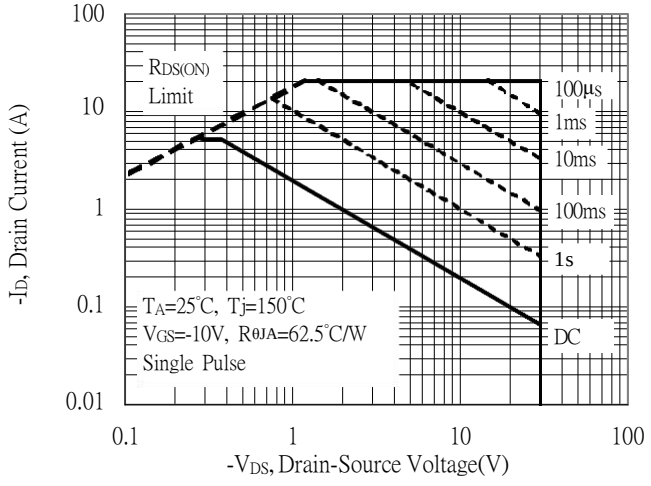
Forward Transfer Admittance vs Drain Current



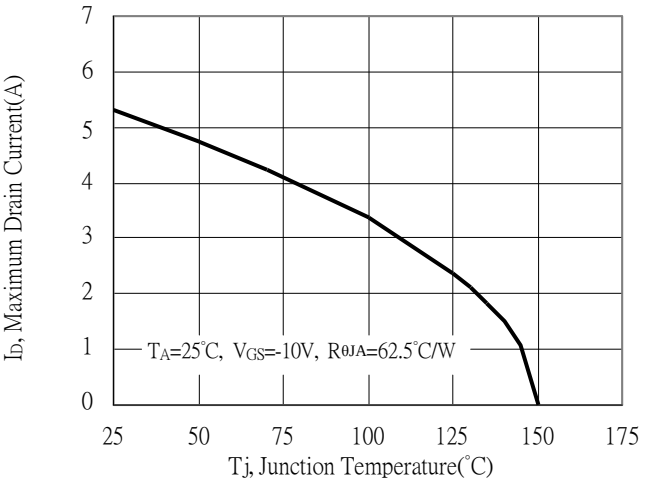
Gate Charge Characteristics



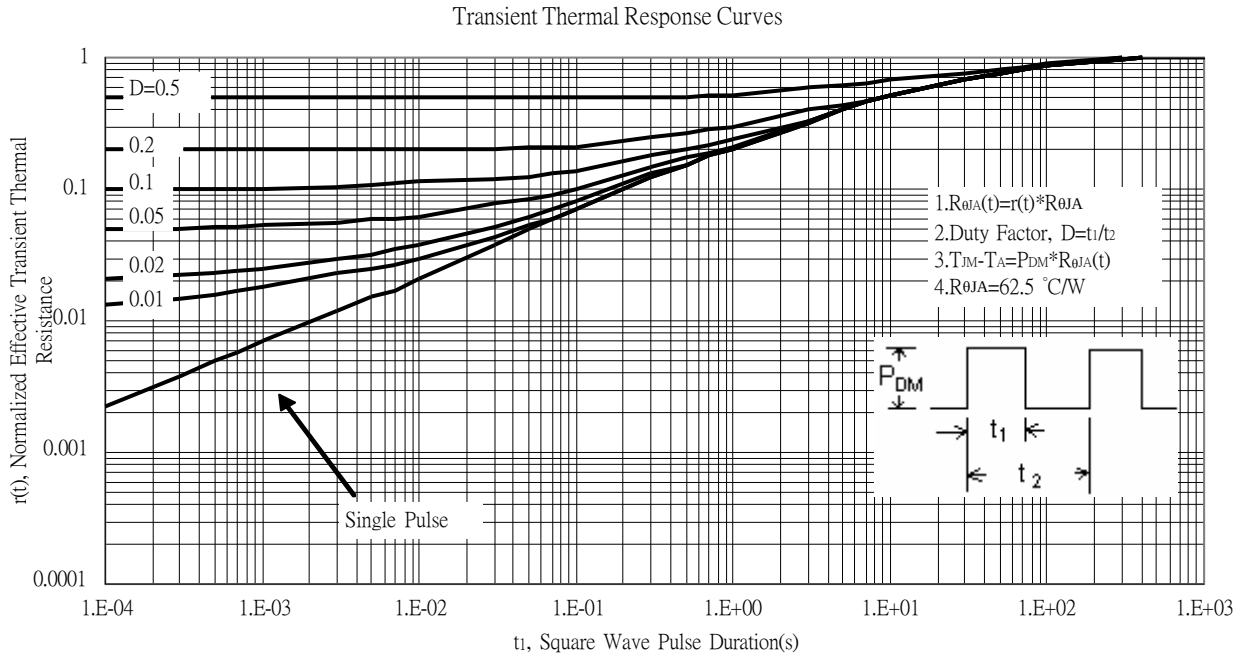
Maximum Safe Operating Area



Maximum Drain Current vs JunctionTemperature



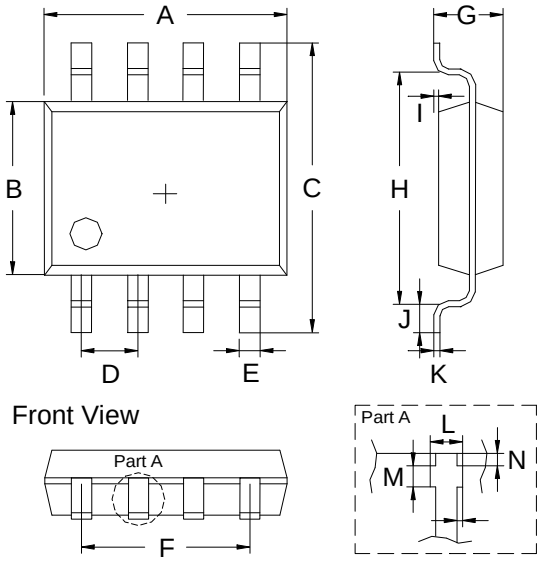
Typical Characteristics (Cont.)



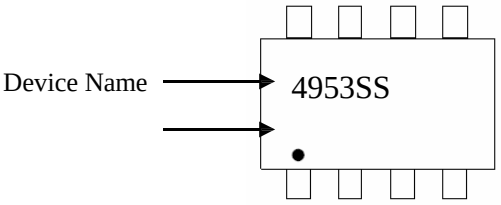
Ordering Information

Device	Package	Shipping
KWDP4953Q8	SOP-8 (Pb-free lead plating and halogen-free package)	2500 pcs / Tape & Reel

SOP-8 Dimension



Marking:



8-Lead SOP-8 Plastic Package
Code: Q8

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1890	0.2007	4.80	5.10	I	0.0098	REF	0.25	REF
B	0.1496	0.1654	3.80	4.20	J	0.0118	0.0354	0.30	0.90
C	0.2283	0.2441	5.80	6.20	K	0.0074	0.0098	0.19	0.25
D	0.0480	0.0519	1.22	1.32	L	0.0145	0.0204	0.37	0.52
E	0.0138	0.0193	0.35	0.49	M	0.0118	0.0197	0.30	0.50
F	0.1472	0.1527	3.74	3.88	N	0.0031	0.0051	0.08	0.13
G	0.0531	0.0689	1.35	1.75	O	0.0000	0.0059	0.00	0.15
H	0.1889	0.2007	4.80	5.10					