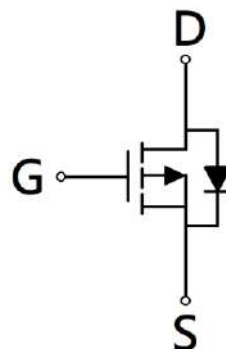
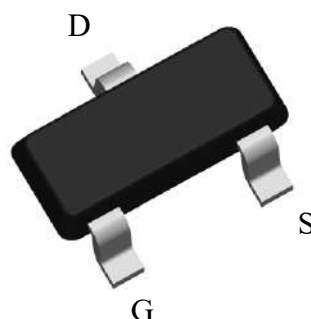


P-Channel Enhancement Mode MOSFET

Features:

- Low On Resistance
- Low Gate Charge
- Fast Switching Characteristic

SOT-23



G : Gate S : Source D : Drain

BV_{DSS}	-20V
$I_D @ V_{GS} = -4.5V, T_A = 25^\circ C$	-4.5A
$R_{DS(ON)} \text{ typ.} @ V_{GS} = -4.5V, I_D = -4.5A$	$35m\Omega$
$R_{DS(ON)} \text{ typ.} @ V_{GS} = -2.5V, I_D = -3.4A$	$45m\Omega$
$R_{DS(ON)} \text{ typ.} @ V_{GS} = -1.8V, I_D = -3.4A$	$70m\Omega$

Ordering Information

Device	Package	Shipping
KWP2305	SOT-23 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel

Absolute Maximum Ratings (T_A=25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V _{DS}	-20	V
Gate-Source Voltage	V _{GS}	±8	
Continuous Drain Current @ V _{GS} =-4.5V, T _A =25°C	I _D	-4.5	A
Continuous Drain Current @ V _{GS} =-4.5V, T _A =70°C		-3.6	
Pulsed Drain Current	I _{DM}	-18	
Continuous Body Diode Forward Current @ T _A =25°C	I _S	-1	W
Total Power Dissipation	P _D	1.4	
		0.9	
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55~+150	°C

Thermal Data

Parameter	Symbol	Steady State	Unit
Thermal Resistance, Junction-to-ambient	R _{θJA}	90	°C/W

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

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	-20	-	-	V	V _{GS} =0V, I _D =-250μA
V _{GS(th)}	-0.4	-	-1.4		V _{DS} =V _{GS} , I _D =-250μA
G _{FS}	-	9	-	S	V _{DS} =-10V, I _D =-4.5A
I _{GSS}	-	-	±100	nA	V _{GS} =±8V, V _{DS} =0V
I _{DSS}	-	-	-1	μA	V _{DS} =-16V, V _{GS} =0V
R _{DS(ON)}	-	35	45	mΩ	V _{GS} =-4.5V, I _D =-4.5A
	-	45	60		V _{GS} =-2.5V, I _D =-3.4A
	-	70	120		V _{GS} =-1.8V, I _D =-3.4A
Dynamic					
C _{iss}	-	1150	-	pF	V _{DS} =-10V, V _{GS} =0V, f=1MHz
C _{oss}	-	120	-		
C _{rss}	-	105	-		
R _g	-	25	-	Ω	f=1MHz
Q _g *1, 2	-	14	-	nC	V _{DS} =-10V, I _D =-4.5A, V _{GS} =-4.5V
Q _{gs} *1, 2	-	1.7	-		
Q _{gd} *1, 2	-	3.5	-		
t _{d(ON)} *1, 2	-	5	-	ns	V _{DS} =-10V, I _D =-4.5A, V _{GS} =-4.5V, R _{GS} =1 Ω
t _r *1, 2	-	17	-		
t _{d(OFF)} *1, 2	-	112	-		
t _f *1, 2	-	145	-		
Source-Drain Diode					
V _{SD} *1	-	-0.85	-1.2	V	I _S =-4.5A, V _{GS} =0V
t _{rr}	-	68	-	ns	I _F =-4.5A, dI _F /dt=100A/μs
Q _{rr}	-	62	-	nC	

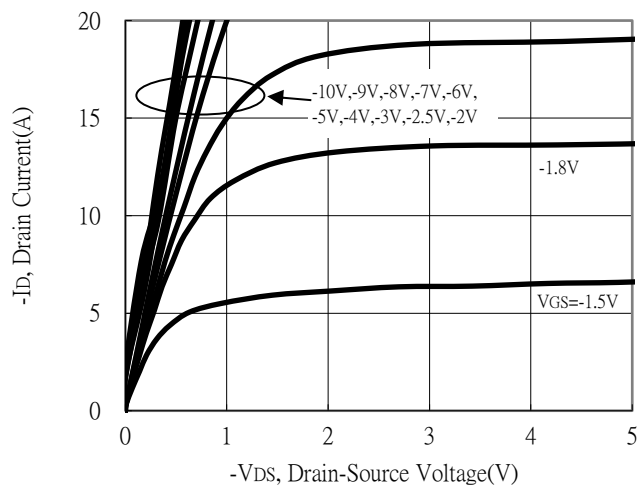
Note:

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

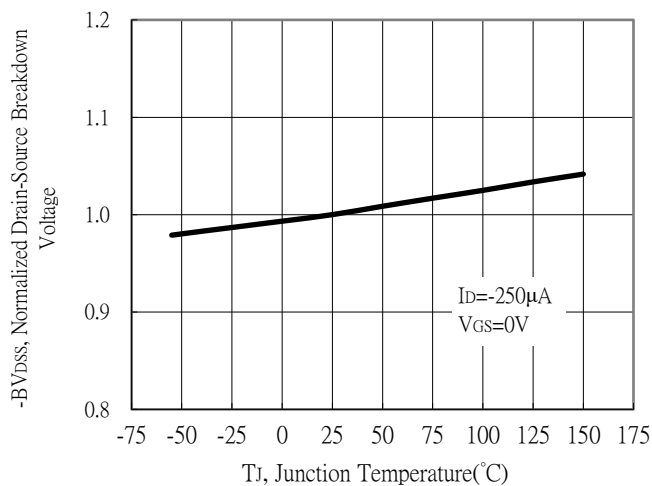
*2. Independent of operating temperature

Typical Characteristics

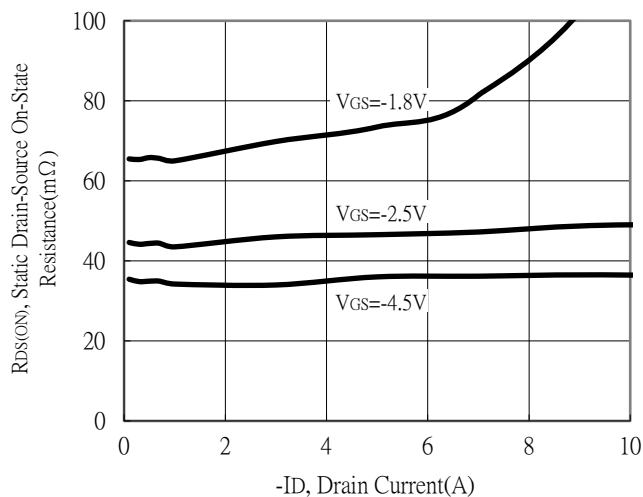
Typical Output Characteristics



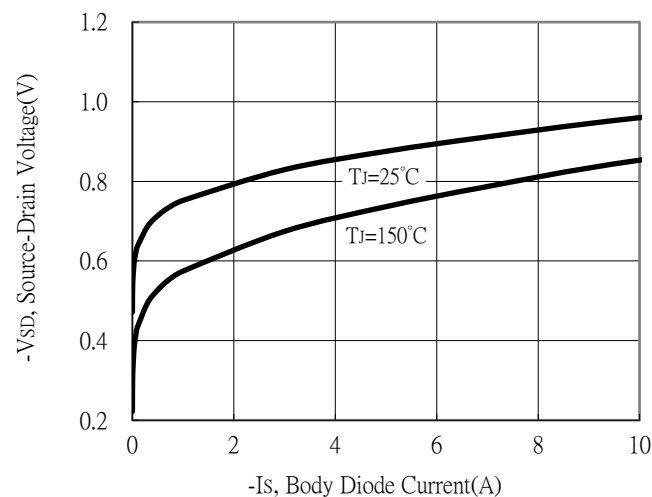
Breakdown Voltage vs Ambient Temperature



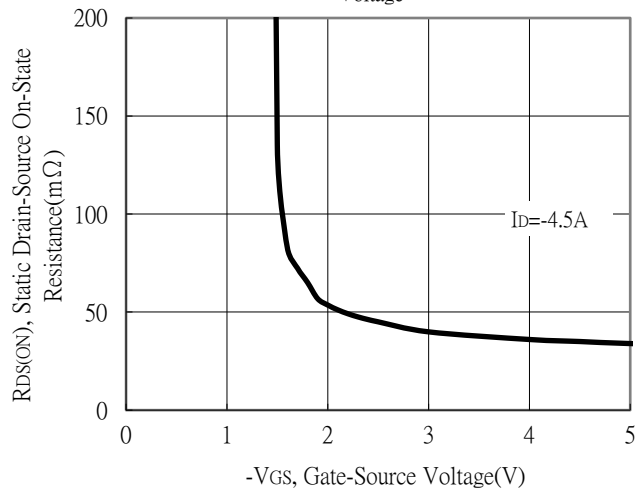
Static Drain-Source On-State resistance vs Drain Current



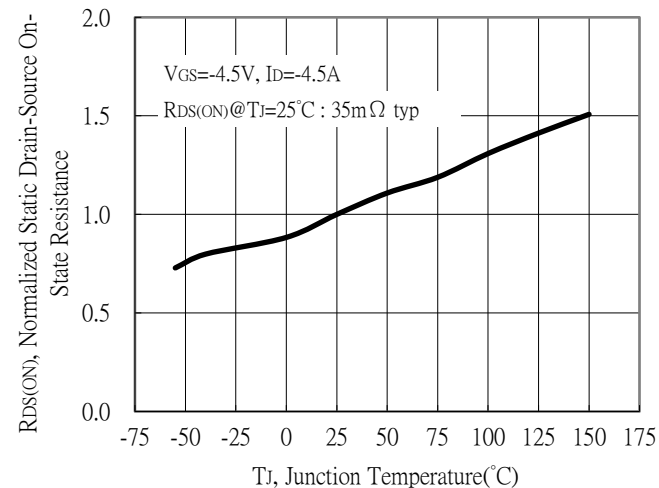
Body Diode Current vs Source-Drain Voltage



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

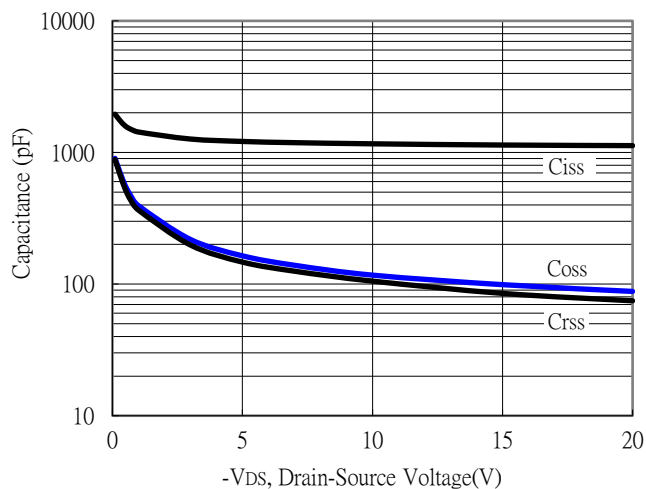


Drain-Source On-State Resistance vs Junction Temperature

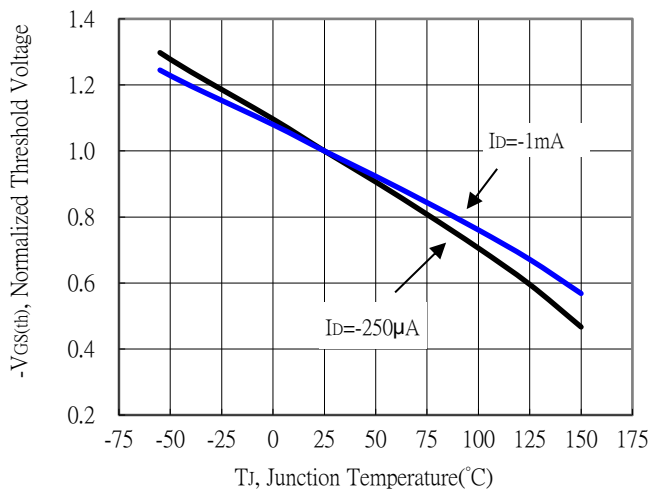


Typical Characteristics (Cont.)

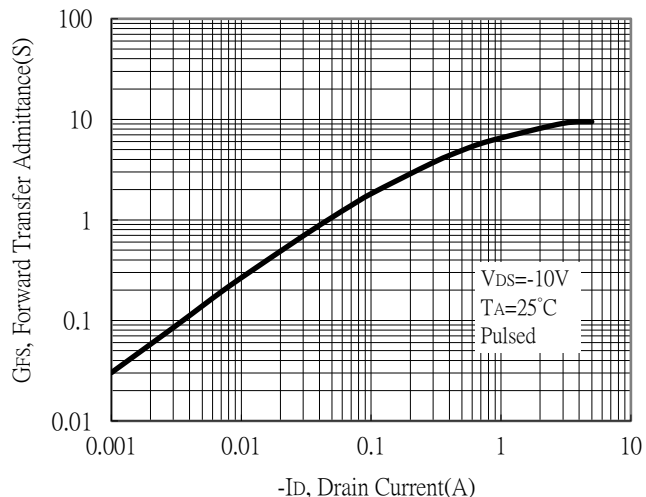
Capacitance vs Drain-to-Source Voltage



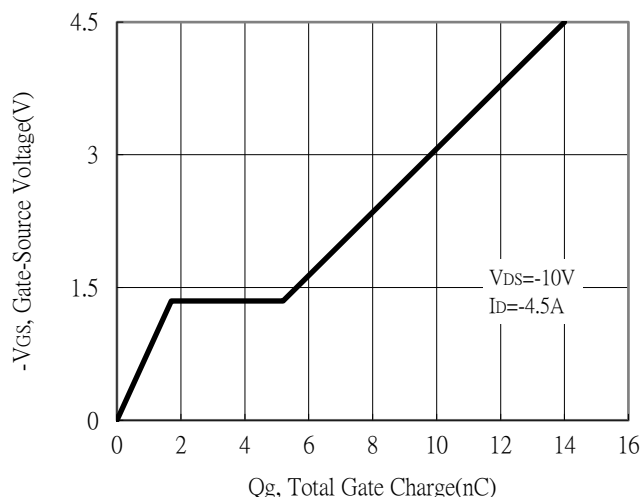
Threshold Voltage vs Junction Temperature



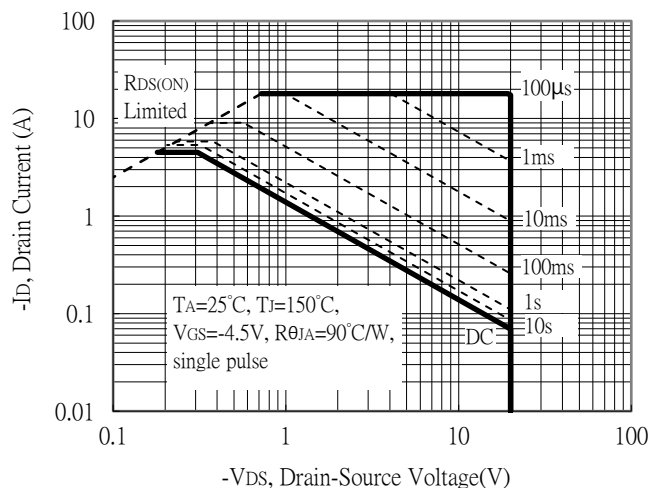
Forward Transfer Admittance vs Drain Current



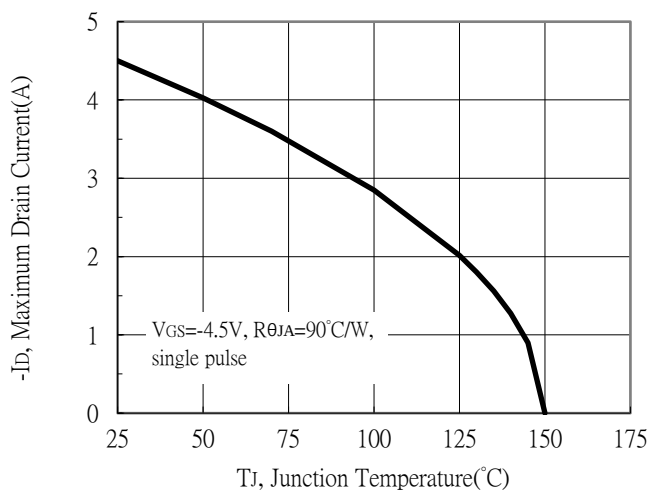
Gate Charge Characteristics



Maximum Safe Operating Area

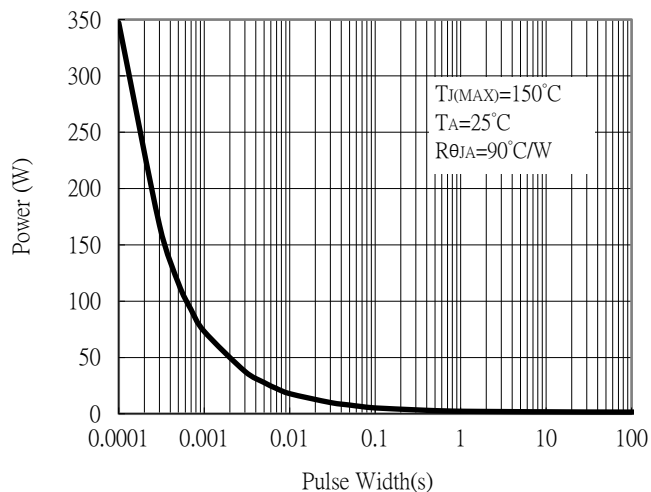


Maximum Drain Current vs Junction Temperature

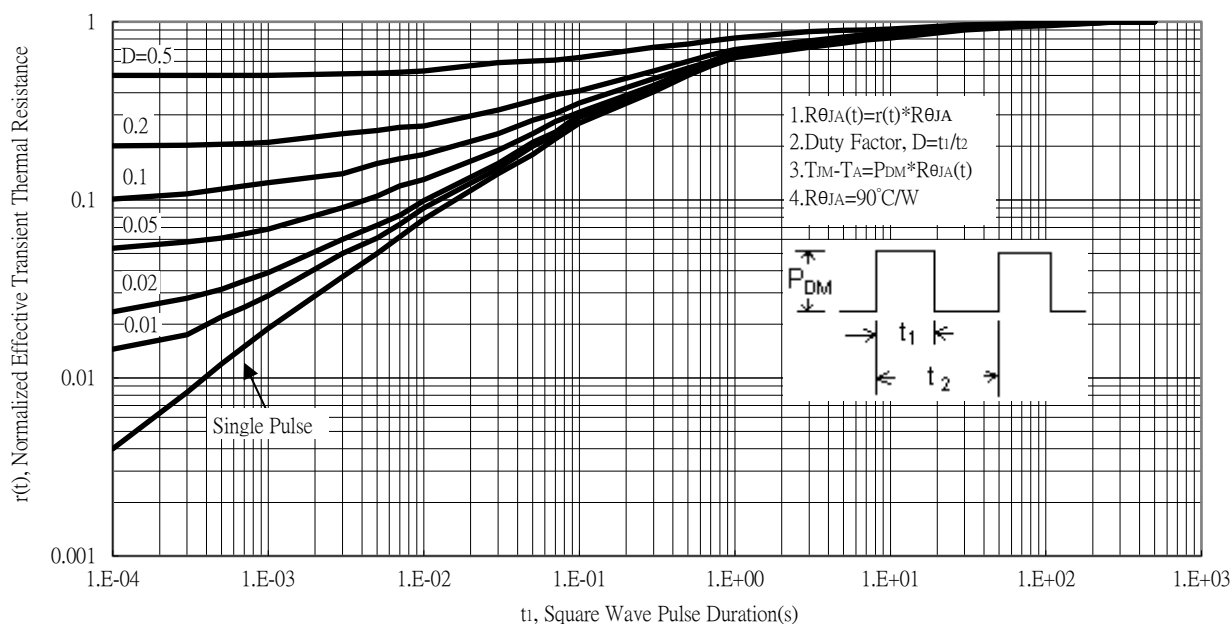


Typical Characteristics (Cont.)

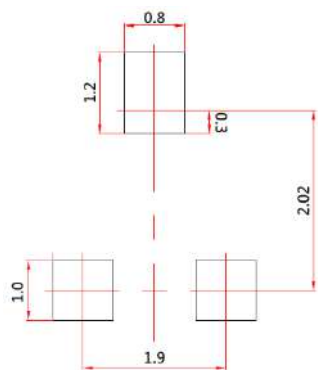
Single Pulse Power Rating, Junction to Ambient



Transient Thermal Response Curves

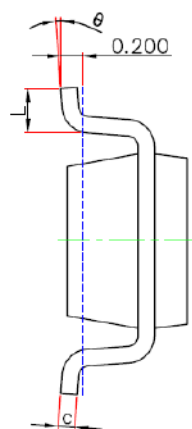
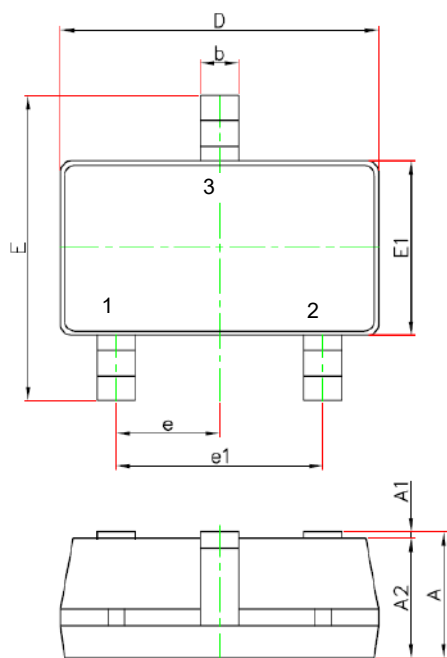


Recommended Soldering Footprint

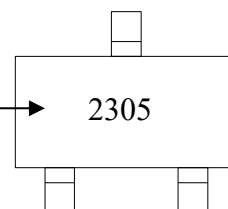


Unit : mm

SOT-23 Dimension



Marking:



Style: Pin 1.Gate 2.Source 3.Drain

3-Lead SOT-23 Plastic
Surface Mounted Package

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.035	0.049	0.90	1.25	E1	0.047	0.067	1.20	1.70
A1	0.000	0.004	0.00	0.10	E	0.089	0.116	2.25	2.95
A2	0.041	0.045	1.05	1.15	e	0.037 BSC		0.95 BSC	
b	0.012	0.020	0.30	0.50	e1	0.071	0.079	1.80	2.00
c	0.003	0.008	0.08	0.20	L	0.012	0.024	0.30	0.60
D	0.110	0.119	2.80	3.02	θ	0°	8°	0°	8°