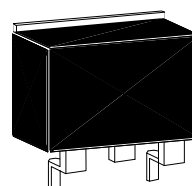


N -Channel Logic Level Enhancement Mode Power MOSFET

Features:

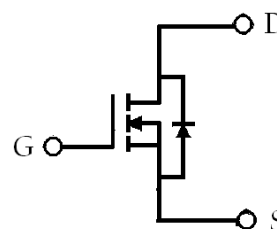
- Low Gate Charge
- Simple Drive Requirement
- Pb-free lead plating package

TO-263



G D S

BV_{DSS}	150V
$I_D @ V_{GS}=10V, T_C=25^\circ C$	20A
$R_{DS(ON)} @ V_{GS}=10V, I_D=15A$	66mΩ(typ)
$R_{DS(ON)} @ V_{GS}=5V, I_D=10A$	64mΩ(typ)
$R_{DS(ON)} @ V_{GS}=3V, I_D=3A$	66mΩ(typ)



G : Gate D : Drain S : Source

Ordering Information

Device	Package	Shipping
KWN6515F3	TO-263 (Pb-free lead plating and RoHS compliant package)	800 pcs / Tape & Reel

Absolute Maximum Ratings (T_C=25°C, unless otherwise noted)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V _{DS}	150	V
Gate-Source Voltage	V _{GS}	±16	
Continuous Drain Current @ T _C =25°C, V _{GS} =10V	I _D	20	A
Continuous Drain Current @ T _C =100°C, V _{GS} =10V		14	
Pulsed Drain Current *1	I _{DM}	60	
Avalanche Current	I _{AS}	20	
Avalanche Energy @ L=0.14mH, I _D =20A, R _G =25Ω	E _{AS}	28	mJ
Repetitive Avalanche Energy @ L=0.05mH *2	E _{AR}	10	
Total Power Dissipation @T _C =25°C	P _d	100	W
Total Power Dissipation @T _C =100°C		50	
Operating Junction and Storage Temperature Range	T _j , T _{stg}	-55~+175	°C

Note : *1. Pulse width limited by maximum junction temperature

*2. Duty cycle ≤ 1%

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-case, max	R _{th,j-c}	1.5	°C/W
Thermal Resistance, Junction-to-ambient, max*	R _{th,j-a}	40	
Thermal Resistance, Junction-to-ambient, max	R _{th,j-a}	62.5	

*When mounted on the minimum pad size (PCB mount), t≤10s.

Characteristics (T_C=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
V _{GS(th)}	0.45	0.8	1.20	V	V _{DS} = V _{GS} , I _D = 250μA
I _{GSS}	-	-	±100	nA	V _{GS} = ±16V, V _{DS} = 0V
I _{DSS}	-	-	1	μA	V _{DS} = 120V, V _{GS} = 0V
	-	-	25		V _{DS} = 100V, V _{GS} = 0V, T _J = 125°C
R _{DS(ON)} *1	-	66	75	mΩ	V _{GS} = 10V, I _D = 15A
	-	64	75		V _{GS} = 5V, I _D = 10A
	-	66	75		V _{GS} = 3V, I _D = 3A
G _{FS} *1	-	43	-	S	V _{DS} = 5V, I _D = 10A
Dynamic					
Q _g *1, 2	-	30	-	nC	I _D = 10A, V _{DS} = 80V, V _{GS} = 5V
Q _{gs} *1, 2	-	4.8	-		
Q _{gd} *1, 2	-	16	-		
t _{d(ON)} *1, 2	-	23	-	ns	V _{DS} = 75V, I _D = 1A, V _{GS} = 4.5V, R _G = 6Ω
t _r *1, 2	-	22	-		
t _{d(OFF)} *1, 2	-	91	-		
t _f *1, 2	-	63	-		

Ciss	-	2282	-	pF	V _{GS} =0V, V _{DS} =25V, f=1MHz
Coss	-	120	-		
Crss	-	66	-		
Source-Drain Diode					
I _S *1	-	-	20	A	
I _{SM} *3	-	-	60		
V _{SD} *1	-	0.86	1.3	V	I _F =I _S , V _{GS} =0V
trr	-	50	-	ns	I _F =20A, dI _F /dt=100A/μs
Q _{rr}	-	120	-	nC	

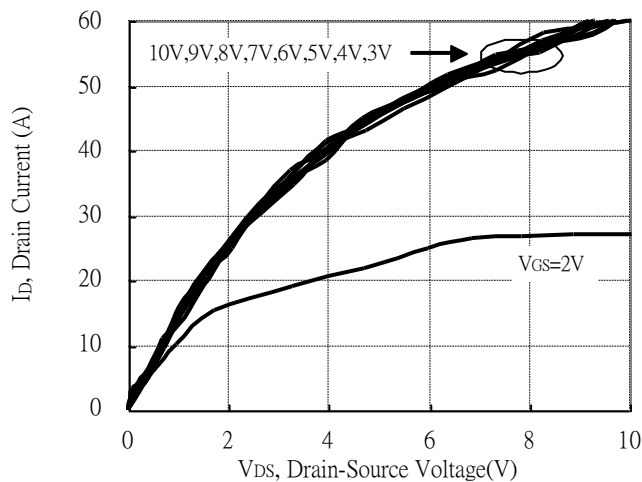
Note : *1.Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

*2.Independent of operating temperature

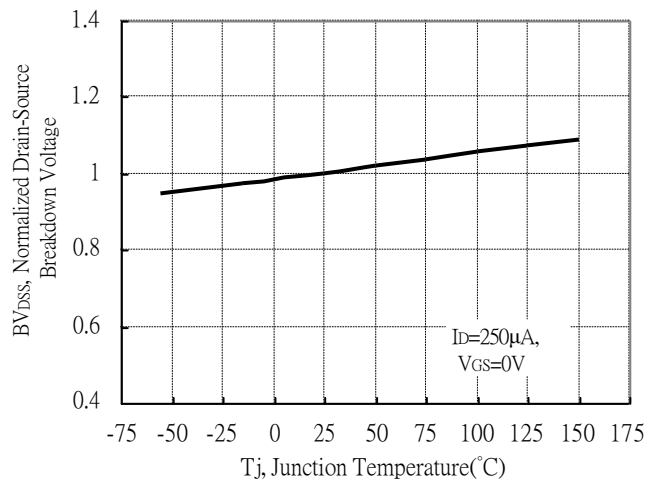
*3.Pulse width limited by maximum junction temperature.

Typical Characteristics

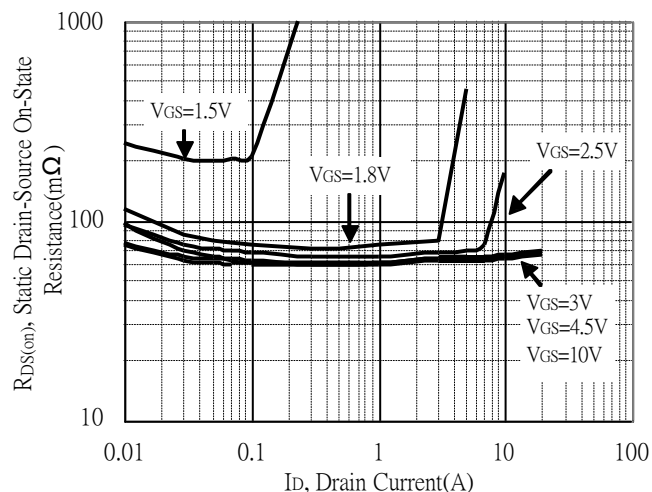
Typical Output Characteristics



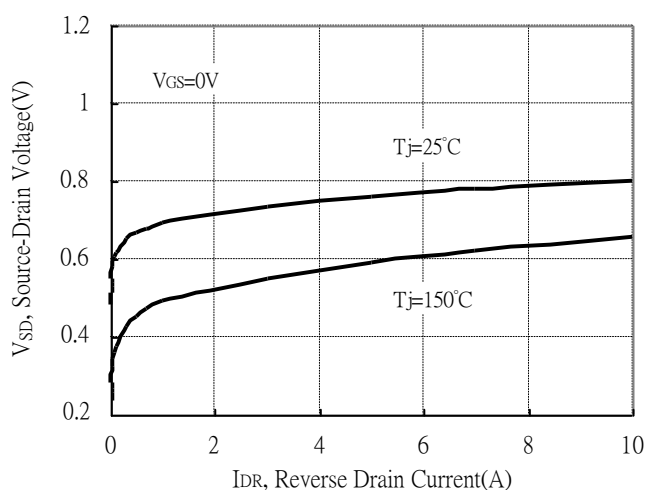
Breakdown Voltage vs Ambient Temperature



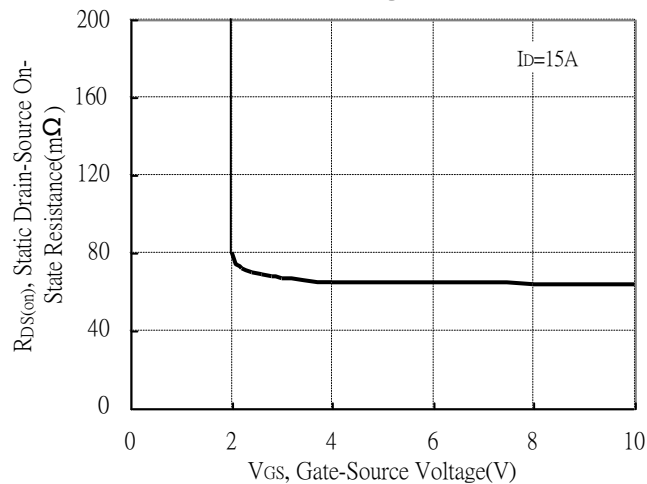
Static Drain-Source On-State resistance vs Drain Current



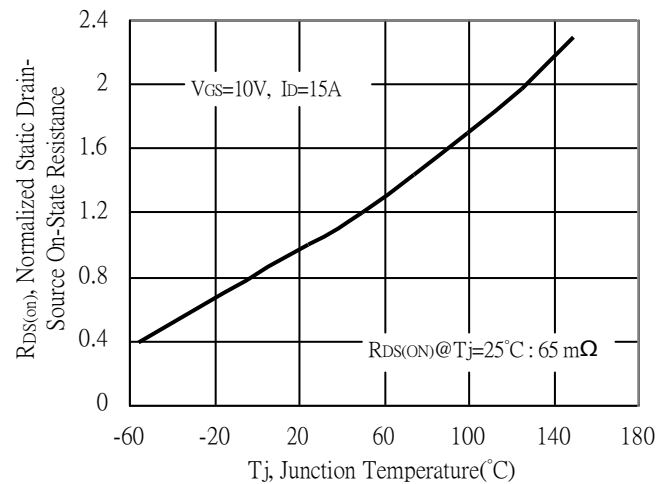
Reverse Drain Current vs Source-Drain Voltage



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

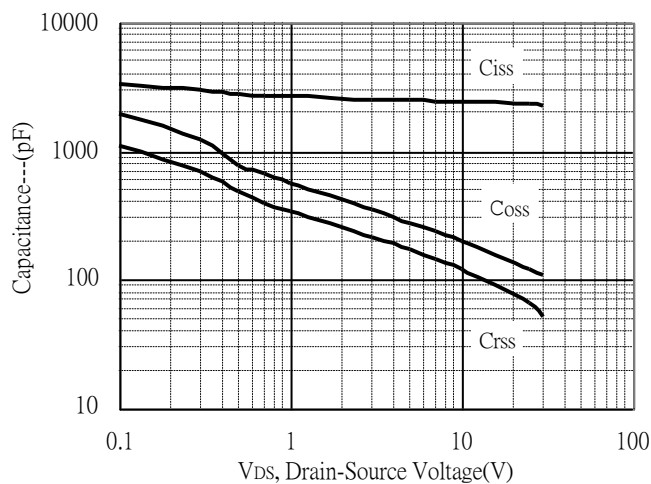


Drain-Source On-State Resistance vs Junction Temperature

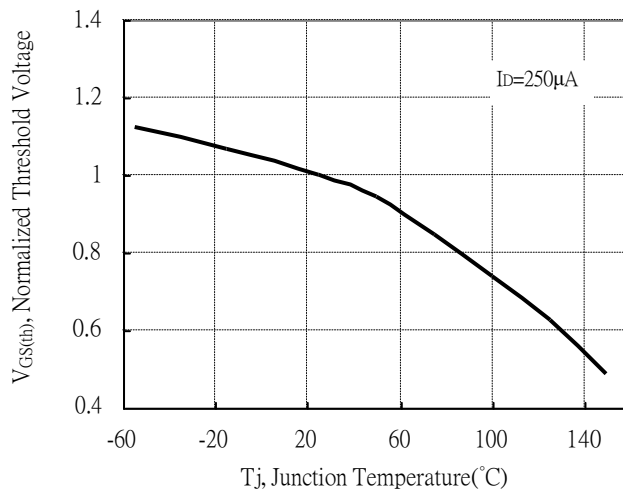


Typical Characteristics (Cont.)

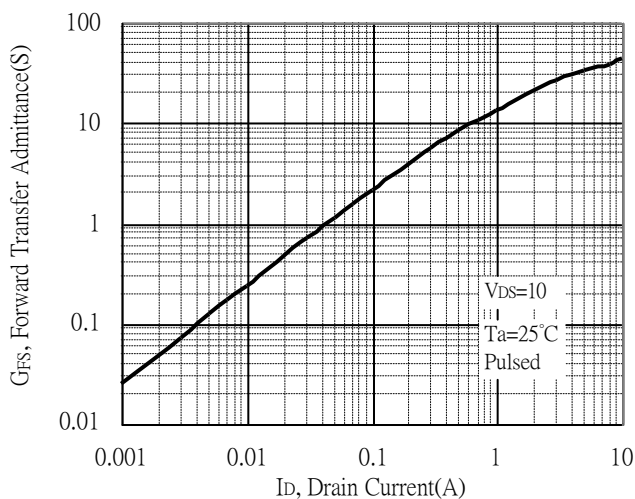
Capacitance vs Drain-to-Source Voltage



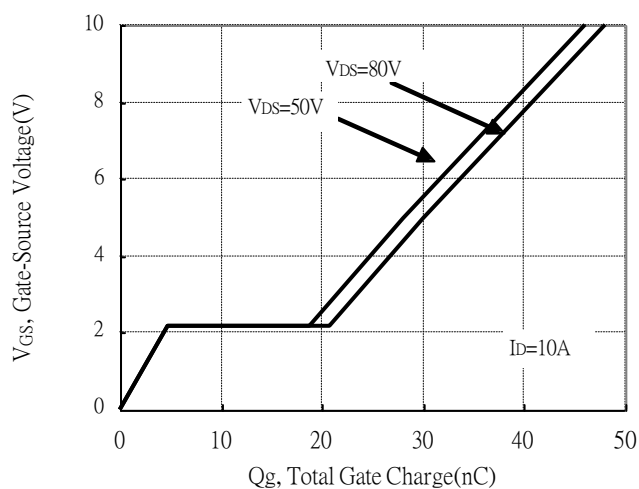
Threshold Voltage vs Junction Temperature



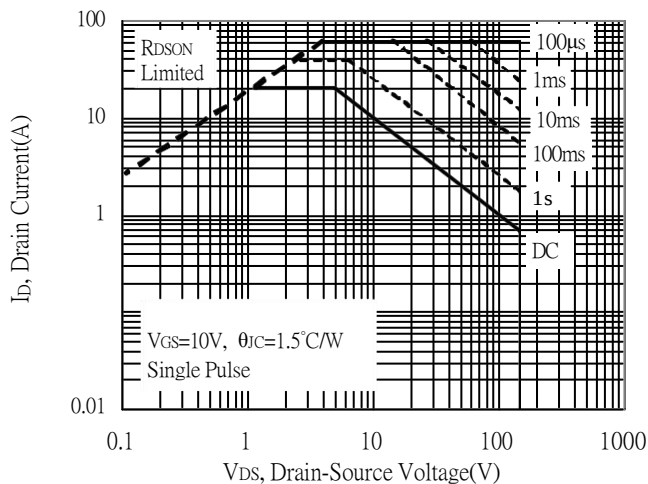
Forward Transfer Admittance vs Drain Current



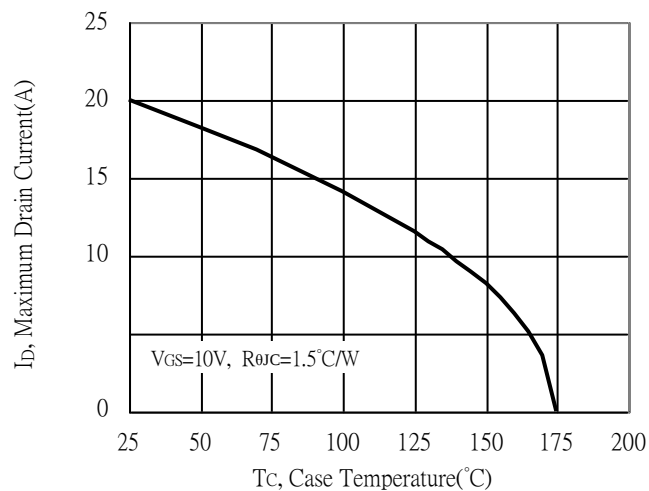
Gate Charge Characteristics



Maximum Safe Operating Area

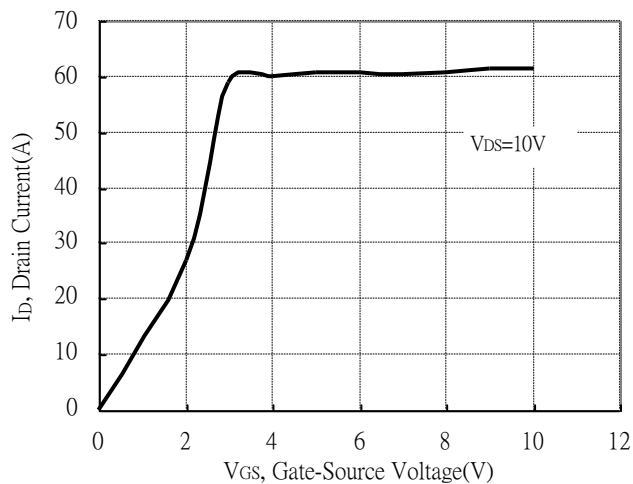


Maximum Drain Current vs Case Temperature

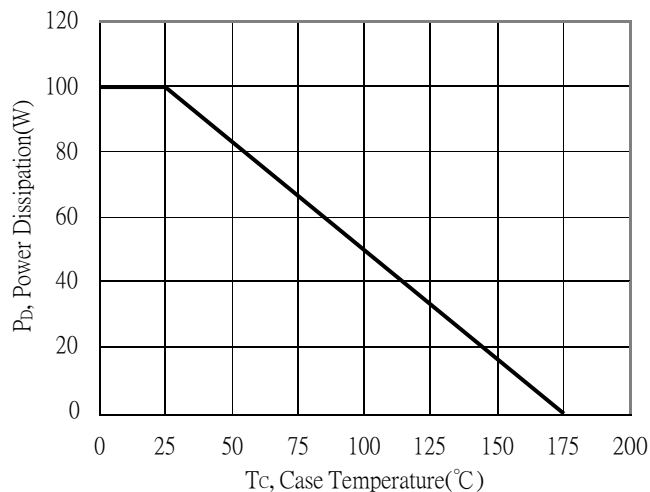


Typical Characteristics (Cont.)

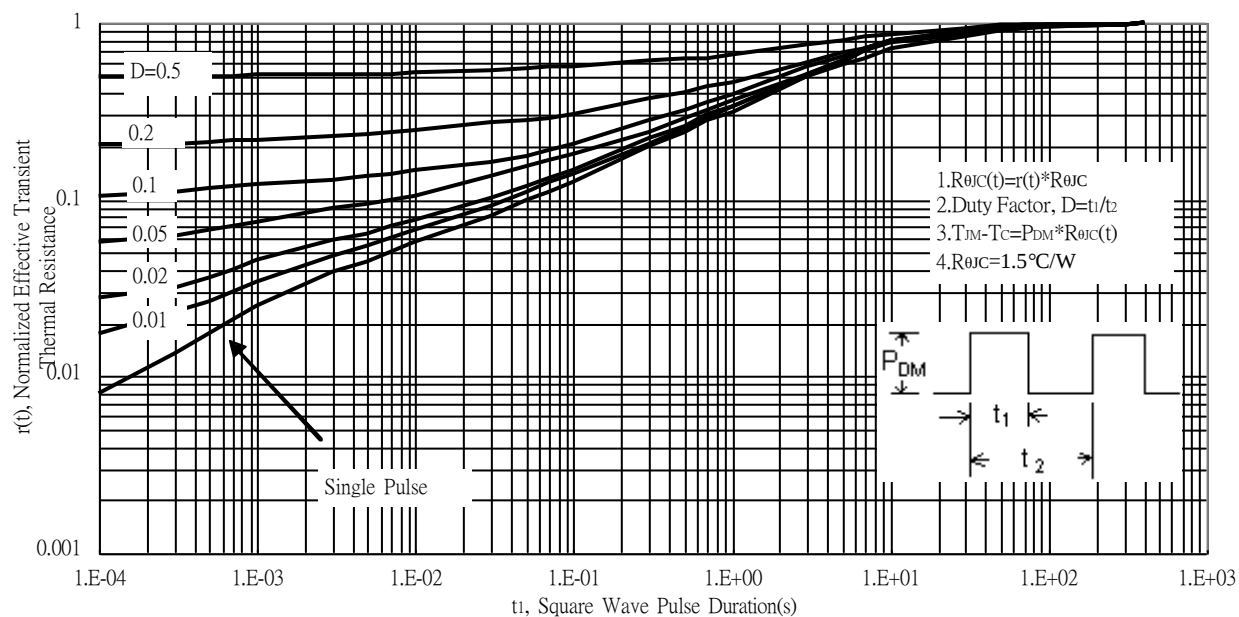
Typical Transfer Characteristics



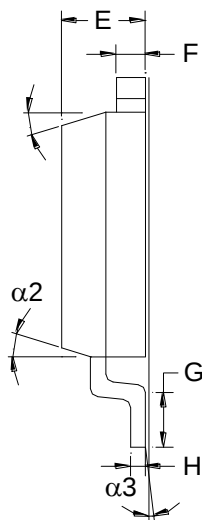
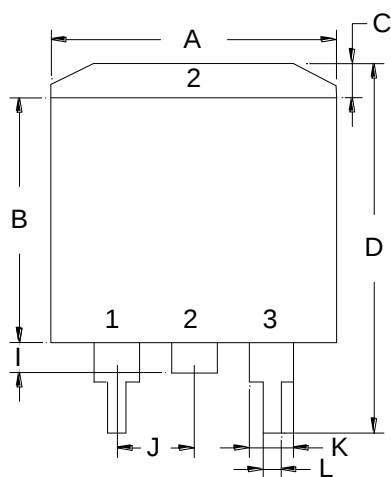
Power Derating Curve



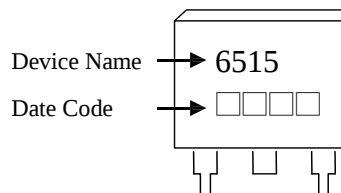
Transient Thermal Response Curves



TO-263 Dimension



Marking :



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

3-Lead Plastic Surface Mounted Package
 Package Code : F3

*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.3800	0.4050	9.65	10.29	I	0.0500	0.0700	1.27	1.78
B	0.3300	0.3700	8.38	9.40	J	-	*0.1000	-	*2.54
C	-	0.0550	-	1.40	K	0.0450	0.0550	1.14	1.40
D	0.5750	0.6250	14.61	15.88	L	0.0200	0.0390	0.51	0.99
E	0.1600	0.1900	4.06	4.83	$\alpha 1$	-	-	6°	8°
F	0.0450	0.0550	1.14	1.40	$\alpha 2$	-	-	6°	8°
G	0.0900	0.1100	2.29	2.79	$\alpha 3$	-	-	0°	5°
H	0.0180	0.0290	0.46	0.74					