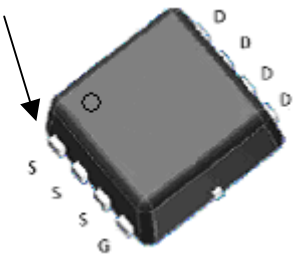
P-Channel Enhancement Mode Power MOSFET

Features:

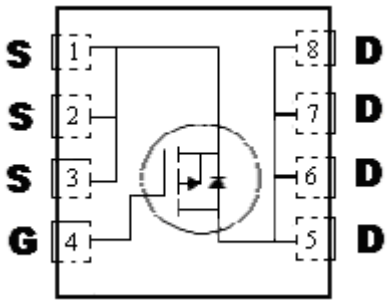
- Simple drive requirement
- Low on-resistance
- Fast switching speed
- Pb-free lead plating and halogen-free package

Pin 1



DFN3x3

BV_{DSS}	-200V
I_D	-3.9A @ V_{GS}=-10V, T_C=25°C
$R_{DSON(Typ)}$	0.80Ω @ V_{GS}=-10V, I_D=-1A
	0.85Ω @ V_{GS}=-6V, I_D=-1A



G：Gate S：Source D：Drain

Ordering Information

Device	Package	Shipping
KWEJ0P20V8	DFN3x3 (Pb-free lead plating and halogen-free package)	3000 pcs / tape & reel

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

Parameter		Symbol	Limits	Unit
Drain-Source Voltage		V_{DS}	-200	V
Gate-Source Voltage		V_{GS}	±30	
Continuous Drain Current @ T_C=25°C, V_{GS}=-10V		I_D	-3.9	A
Continuous Drain Current @ T_C=70°C, V_{GS}=-10V			-3.1	
Continuous Drain Current @ T_A=25°C, V_{GS}=-10V	*3, 4		-1.3	
Continuous Drain Current @ T_A=70°C, V_{GS}=-10V	*3, 4		-1.0	
Pulsed Drain Current	*1, 2	I_{DM}	-6.0	
Continuous Source-Drain Diode Current	T_C=25℃	I_S	-5	
	T_A=25℃		-3	
Avalanche Current		I_{AS}	-5	
Avalanche Energy @ L=2mH, I_D=-5A, R_G=25Ω		E_{AS}	25	mJ
Maximum Power Dissipation	T_C=25℃	P_D	33	W
	T_C=70℃		21	
	T_A=25℃ *3, 4		3.7	
	T_A=70℃ *3, 4		2.4	
Operating Junction and Storage Temperature Range		Tj, Tstg	-55~+150	°C

Thermal Data

Parameter		Symbol	Typ	Maximum	Unit
Thermal Resistance, Junction-to-ambient *3	t≤10s	$R_{th,j-a}$	28	34	°C/W
	Steady State		65	81	
Thermal Resistance, Junction-to-case		$R_{th,j-c}$	2.9	3.8	

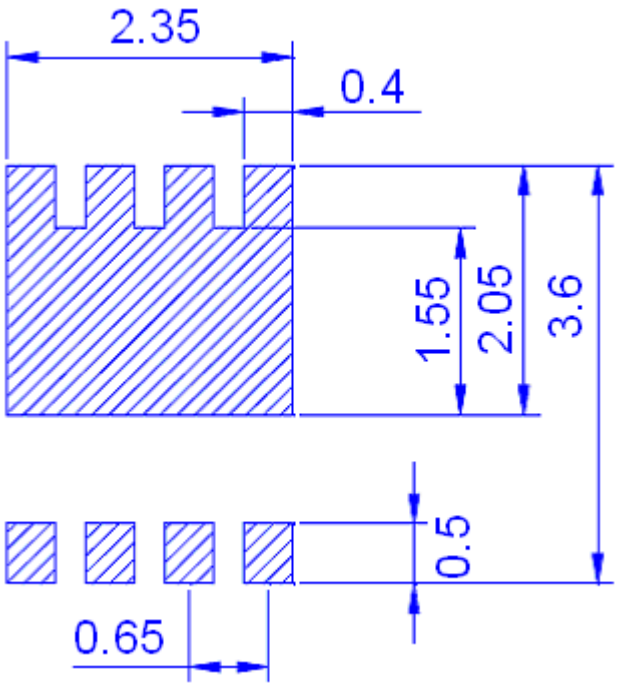
Note : 1. Pulse width limited by maximum junction temperature.
2. Duty cycle≤1%.
3. Surface mounted on 1 in^2 copper pad of FR-4 board.
4. t≤10s.

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

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV_{DSS}	-200	-	-	V	V_{GS}=0V, I_D=-250μA
$\Delta BV_{DSS}/T_J$	-	-160	-	mV/°C	I_D=-250μA
$\Delta V_{GS(th)}/T_J$	-	-7.3	-		
$V_{GS(th)}$	-2	-3	-4	V	V_{DS} =V_{GS}, I_D=-250μA
I_{GSS}	-	-	±100	nA	V_{GS}=±30V, V_{DS}=0V
I_{DSS}	-	-	-1	μA	V_{DS} =-200V, V_{GS} =0V
	-	-	-10		V_{DS} =-200V, V_{GS} =0V, T_J=55°C
$R_{DS(ON)}$ *1	-	0.80	1.0	Ω	V_{GS} =-10V, I_D=-1A
	-	0.85	1.1		V_{GS} =-6V, I_D=-1A
G_{FS} *1	-	2	-	S	V_{DS} =-15V, I_D=-1A
Dynamic					
Qg(V_{GS}=-10V) *1, 2	-	11	18	nC	V_{DS}=-100V, I_D=-1A,V_{GS}=-10V
Qg(V_{GS}=-6V) *1, 2	-	7.7	12		
Qgs *1, 2	-	2.0	-		
Qgd *1, 2	-	4.2	-		
$t_{d(ON)}$ *1, 2	-	13	20	ns	V_{DS}=-100V, I_D=-1A, V_{GS}=-10V, R_G=1Ω
tr *1, 2	-	7	11		
$t_{d(OFF)}$ *1, 2	-	21	32		
t_f *1, 2	-	11	17		
$t_{d(ON)}$ *1, 2	-	13	20	ns	V_{DS}=-100V, I_D=-1A, V_{GS}=-6V, R_G=1Ω
tr *1, 2	-	20	30		
$t_{d(OFF)}$ *1, 2	-	15	23		
t_f *1, 2	-	11	17		
Ciss	-	765	-	pF	V_{DS}=-50V, V_{GS}=0V, f=1MHz
Coss	-	29	-		
Crss	-	12	-		
Rg	-	13	16	Ω	f=1MHz
Source-Drain Diode					
I_S *1	-	-	-5	A	T_C=25°C
I_{SM} *3	-	-	-5		
V_{SD} *1	-	-0.79	-1.2	V	I_F=-1A, V_{GS}=0V
trr	-	72	100	ns	I_F=-4A, dI_F/dt=100A/μs
Qrr	-	240	310	nC	
ta		52		ns	
tb		20			

Note : *1.Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%
*2.Independent of operating temperature
*3.Pulse width limited by maximum junction temperature.

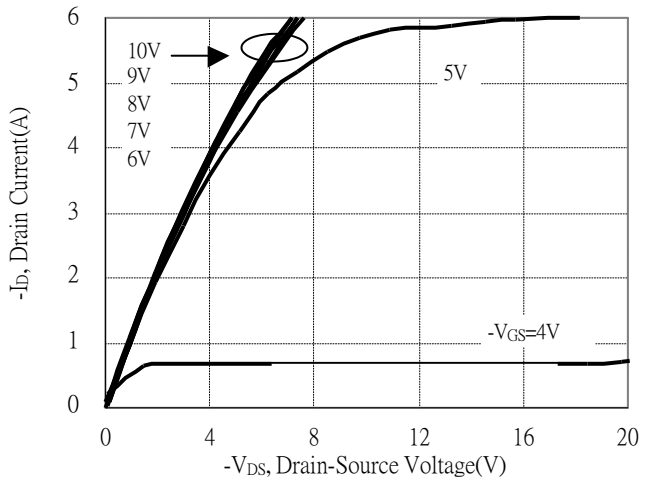
Recommended Soldering Footprint



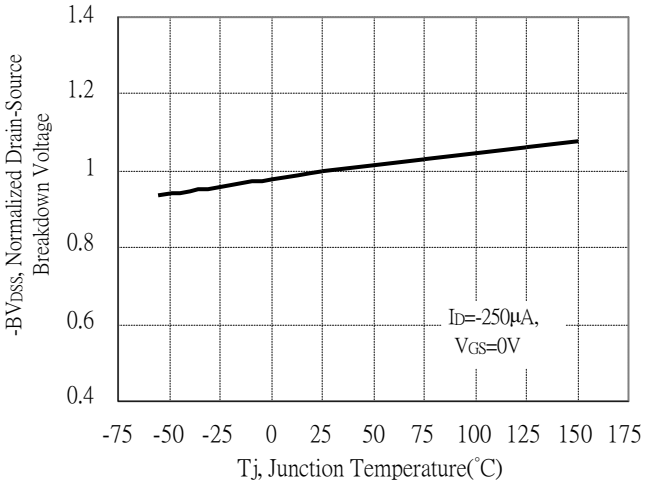
unit : mm

Typical Characteristics

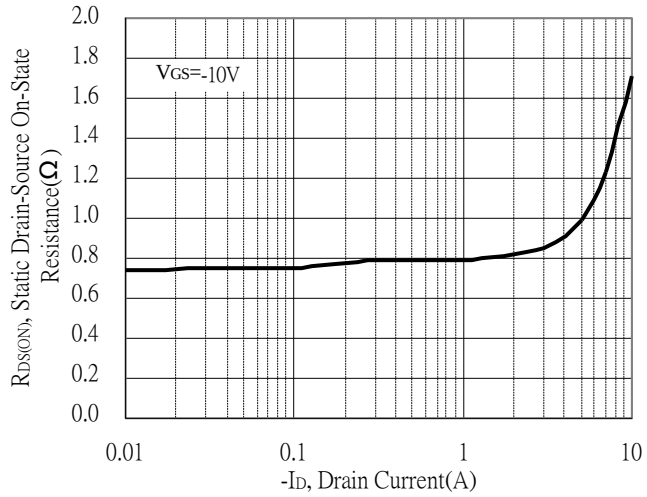
Typical Output Characteristics



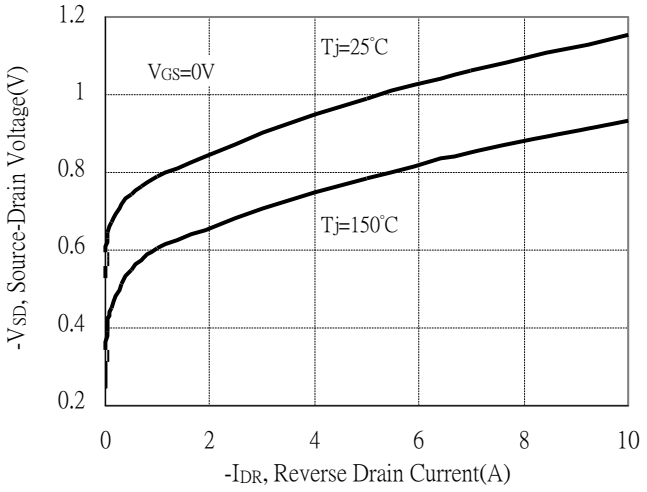
Brekdown Voltage vs Ambient Temperature



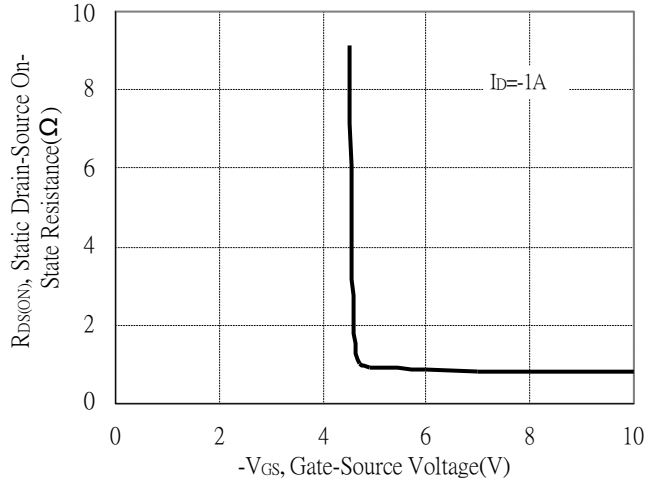
Static Drain-Source On-State resistance vs Drain Current



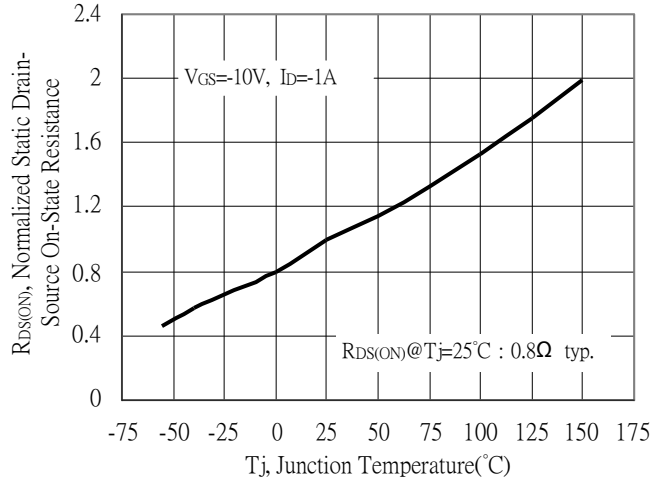
Reverse Drain Current vs Source-Drain Voltage



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

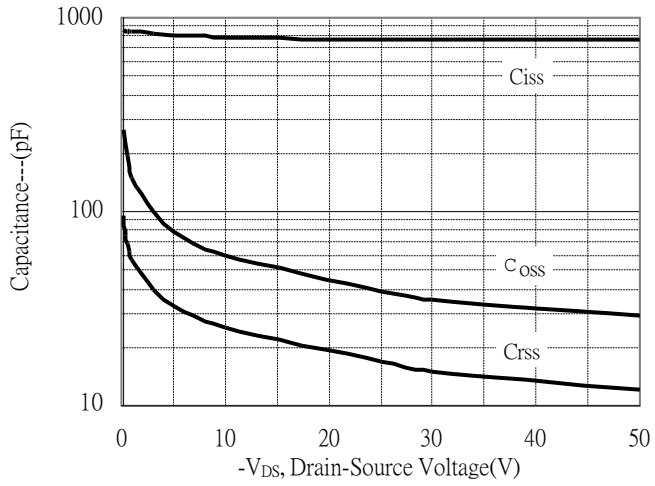


Drain-Source On-State Resistance vs Junction Tempearture

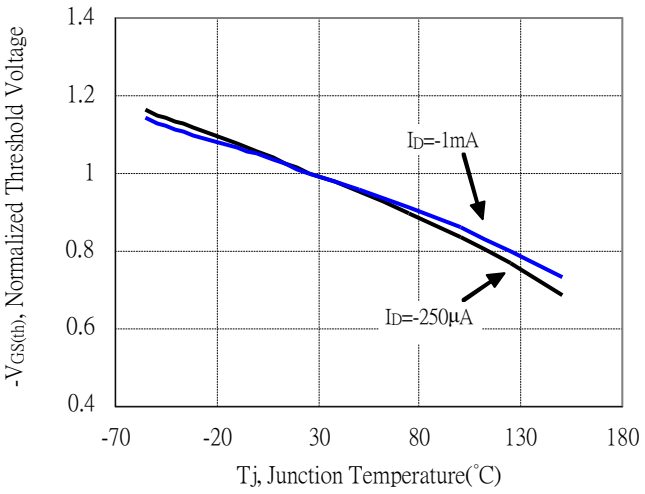


Typical Characteristics(Cont.)

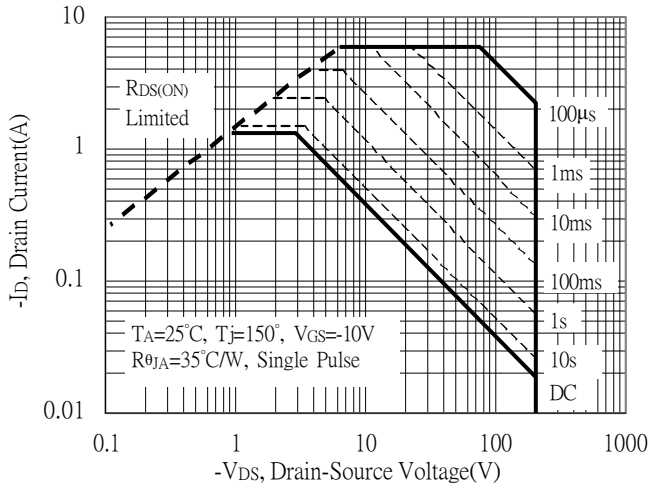
Capacitance vs Drain-to-Source Voltage



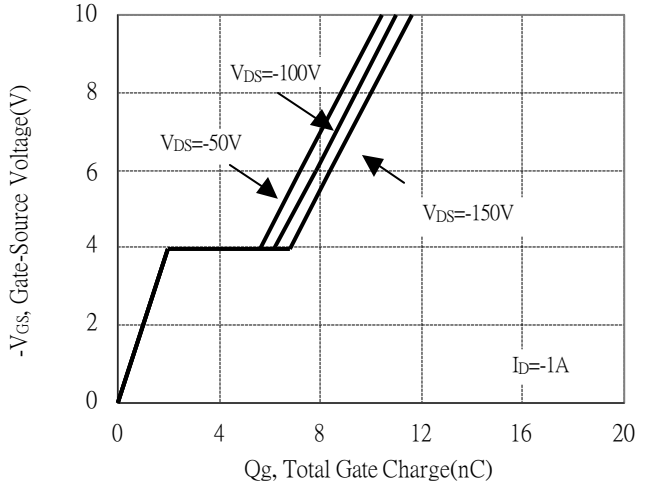
Threshold Voltage vs Junction Tempearture



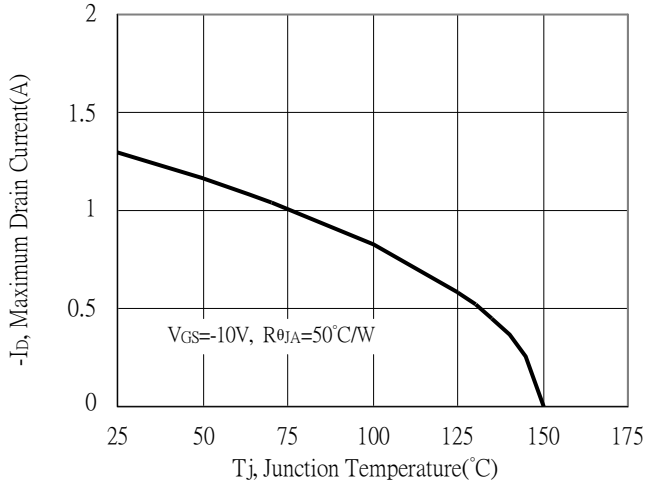
Maximum Safe Operating Area



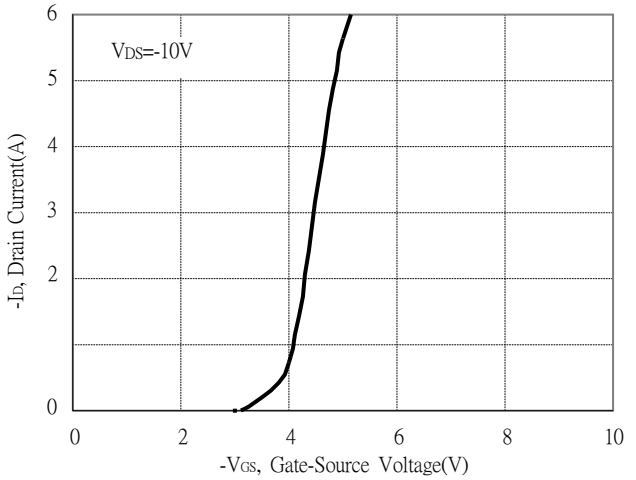
Gate Charge Characteristics



Maximum Drain Current vs Junction Temperature

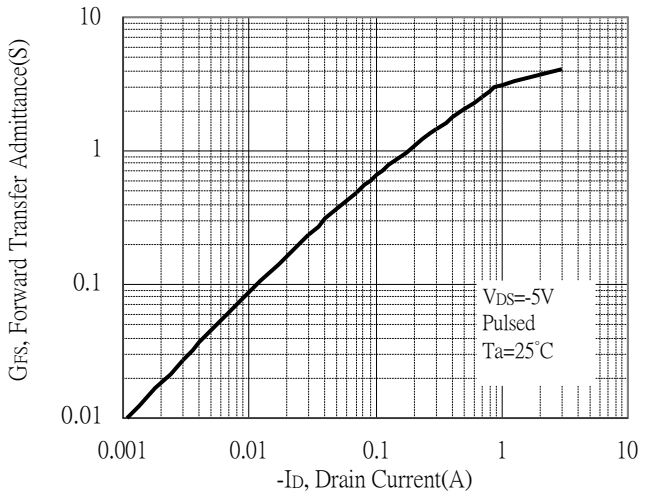


Typical Transfer Characteristics

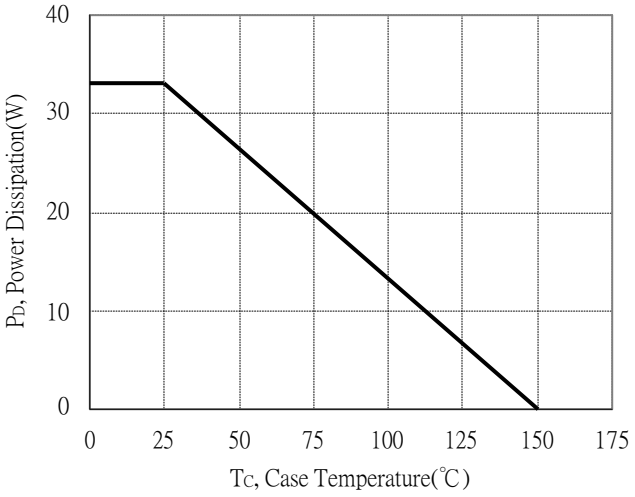


Typical Characteristics(Cont.)

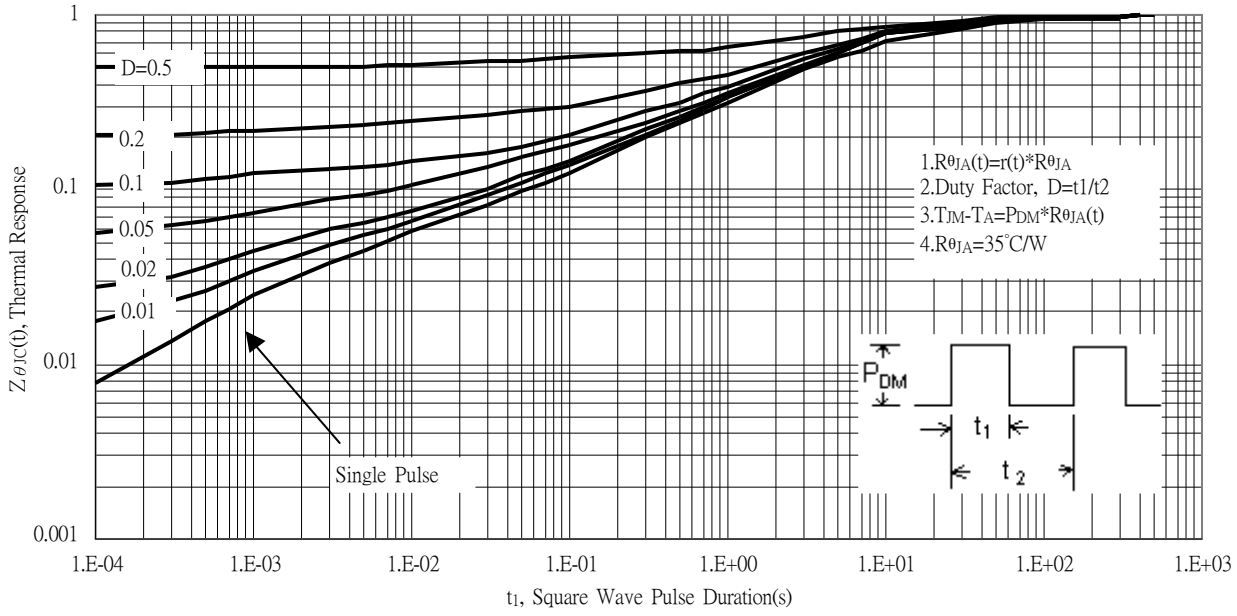
Forward Transfer Admittance vs Drain Current



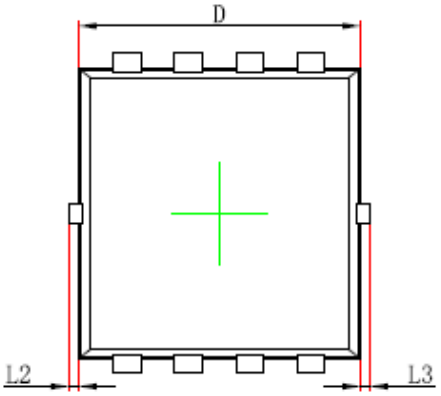
Power Derating Curve



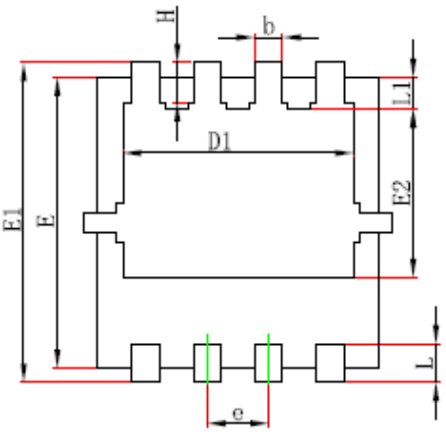
Transient Thermal Response Curves



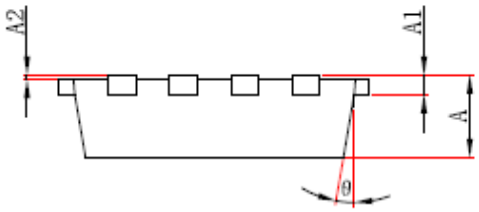
DFN3x3 Dimension



Top View

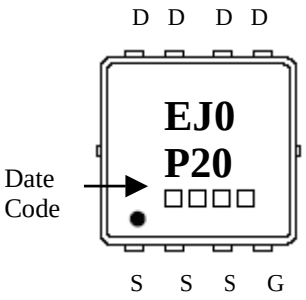


Bottom View



Side View

Marking:



8-Lead DFN3x3 Plastic Package
de: V8

*: Typical

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.605	0.850	0.026	0.033	b	0.200	0.400	0.008	0.016
A1	0.152 REF		0.006 REF		e	0.550	0.750	0.022	0.030
A2	0.000	0.050	0.000	0.002	L	0.300	0.500	0.012	0.020
D	2.900	3.100	0.114	0.122	L1	0.180	0.480	0.007	0.019
D1	2.300	2.600	0.091	0.102	L2	0.000	0.100	0.000	0.004
E	2.900	3.100	0.114	0.122	L3	0.000	0.100	0.000	0.004
E1	3.150	3.450	0.124	0.136	H	0.315	0.515	0.012	0.020
E2	1.535	1.935	0.060	0.076	θ	9°	13°	9°	13°