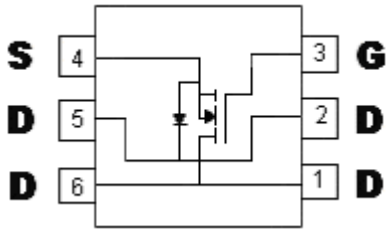
N-Channel Enhancement Mode MOSFET

Features:

- Simple drive requirement
- Low on-resistance
- Small package outline
- Pb-free lead plating package

KWB280N15N6



G：Gate S：Source D：Drain

BVDSS		150V
I_D@V_{GS}=10V, T_C=25°C		2.2A
I_D@V_{GS}=10V, T_A=25°C		1.7A
$R_{DSON(TYP)}$	V_{GS}=-10V, I_D=-1.5A	288mΩ
	V_{GS}=-4.5V, I_D=-1.5A	299mΩ

Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Drain-Source Voltage		V_{DS}	150	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current	T_C=25 °C	I_D	2.2	A
	T_C=70 °C		1.8	
	T_A=25 °C (Note 1)		1.7	
	T_A=70 °C (Note 1)		1.4	
Pulsed Drain Current (Note 2, 3)		I_{DM}	8	
Total Power Dissipation	T_C=25 °C	P_D	3.2	W
	T_C=70 °C		2.1	
	T_A=25 °C		2	
	T_A=70 °C		1.25	
Operating Junction Temperature and Storage Temperature Range		Tj, Tstg	-55~+150	°C

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-case, max	$R_{\theta JC}$	39	°C/W
Thermal Resistance, Junction-to-ambient, max (Note 1)	$R_{\theta JA}$	62.5	

Note : 1.Surface mounted on 1 in² copper pad of FR-4 board, t≤5 sec. 156℃/W when mounted on minimum copper pad.
2.Pulse width limited by maximum junction temperature.
3.Pulse Width ≤300μs, Duty Cycle≤2%

Ordering Information

Device	Package	Shipping
KWB280N15N6	SOT-26 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel

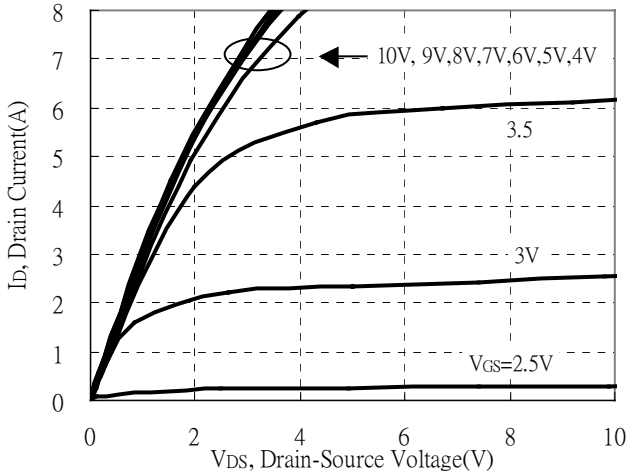
Electrical Characteristics (Ta=25°C, unless otherwise noted)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV_{DSS}	150	-	-	V	V_{GS}=0V, I_D=250μA
$\Delta BV_{DSS}/\Delta Tj$	-	0.1	-	V/℃	Reference to 25℃, I_D=250μA
$V_{GS(th)}$	1	-	2.5	V	V_{DS}=V_{GS}, I_D=250μA
I_{GSS}	-	-	±100	nA	V_{GS}=±20V, V_{DS}=0V
I_{DSS}	-	-	1	μA	V_{DS}=120V, V_{GS}=0V, Tj=25℃
	-	-	10		V_{DS}=120V, V_{GS}=0V, Tj=55℃
*$R_{DS(ON)}$	-	288	360	mΩ	I_D=1.5A, V_{GS}=10V
	-	299	400		I_D=1.5A, V_{GS}=4.5V
*G_{FS}	-	3.3	-	S	V_{DS}=15V, I_D=1A
Dynamic					
Ciss	-	298	-	pF	V_{DS}=30V, V_{GS}=0V, f=1MHz
Coss	-	32	-		
Crss	-	19	-		
$t_{d(ON)}$	-	5.2	-	ns	V_{DS}=75V, I_D=1A, V_{GS}=10V, R_G=6Ω
t_r	-	16.2	-		
$t_{d(OFF)}$	-	20.8	-		
t_f	-	15.6	-		
Qg	-	8.1	-	nC	V_{DS}=75V, I_D=1.7A, V_{GS}=10V,
Qgs	-	1	-		
Qgd	-	1.9	-		
Source-Drain Diode					
*I_S	-	-	1.7	A	
*I_{SM}	-	-	5		
*V_{SD}	-	0.8	1.2	V	I_S=1.7A,V_{GS}=0V
*t_{rr}	-	45	-	ns	I_F=1.7A,V_{GS}=0V, dI_F/dt=100A/μs
Q_{rr}	-	16	-	nC	

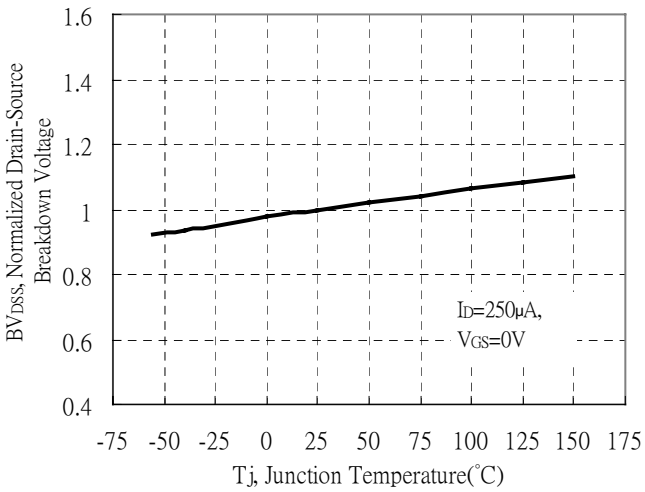
*Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

Typical Characteristics

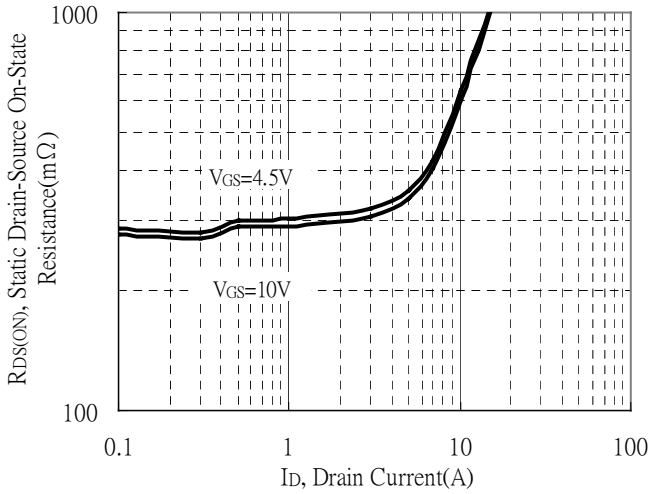
Typical Output Characteristics



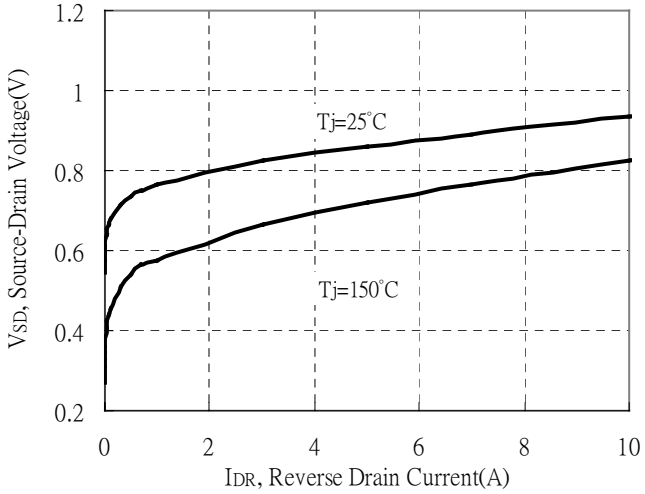
Brekdown Voltage vs Ambient Temperature



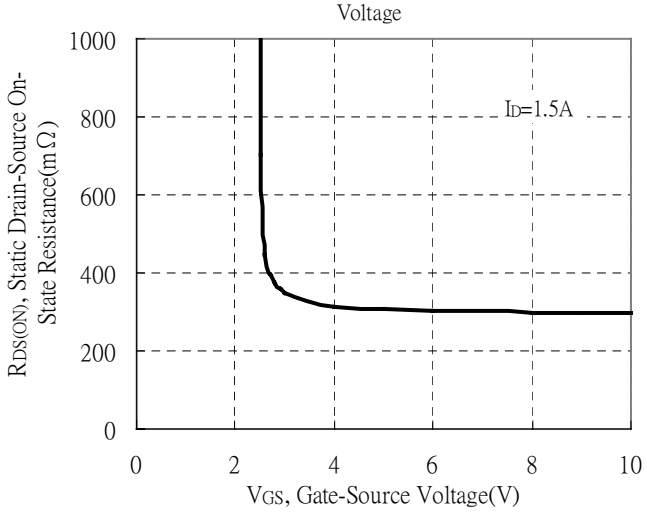
Static Drain-Source On-State resistance vs Drain Current



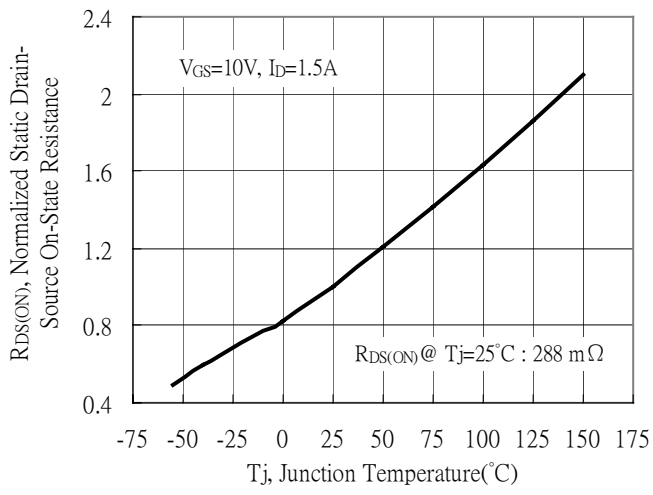
Reverse Drain Current vs Source-Drain Voltage



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

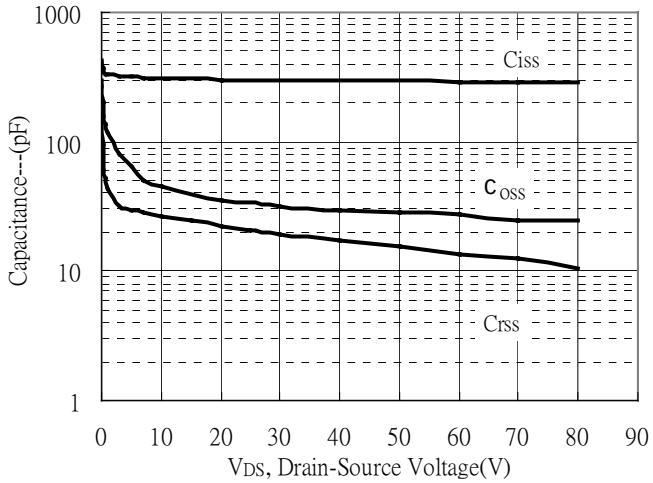


Drain-Source On-State Resistance vs Junction Tempearture

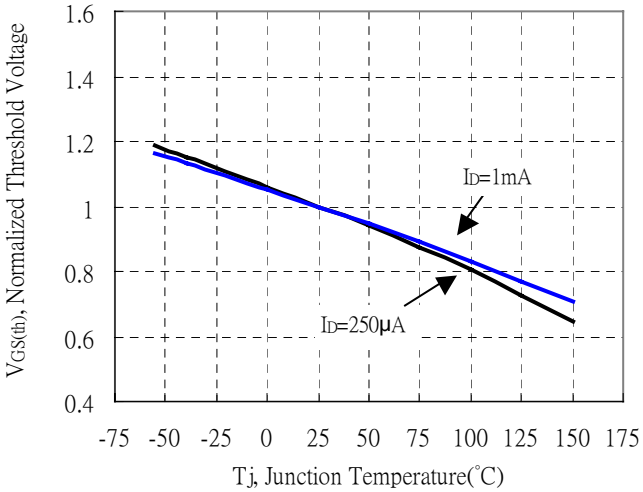


Typical Characteristics(Cont.)

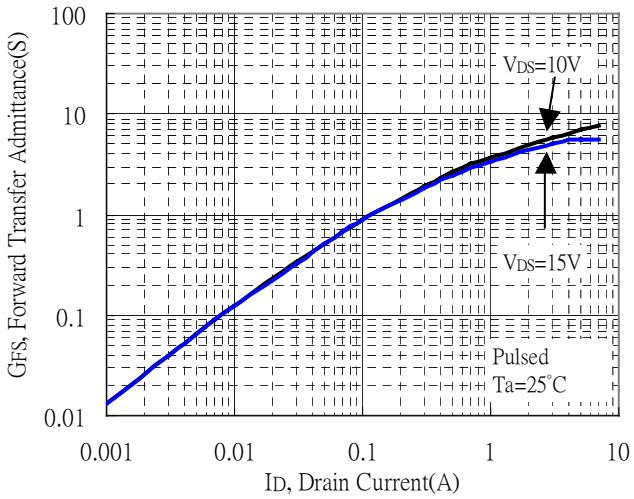
Capacitance vs Drain-to-Source Voltage



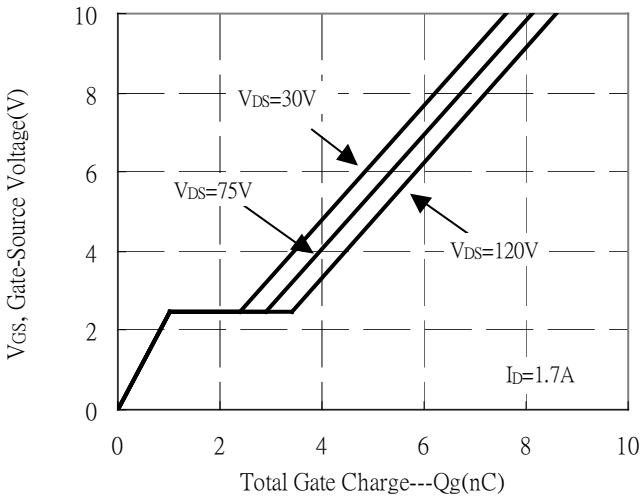
Threshold Voltage vs Junction Tempearture



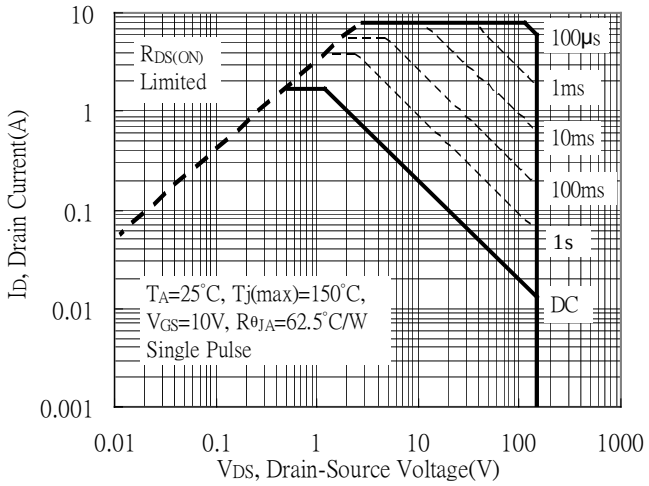
Forward Transfer Admittance vs Drain Current



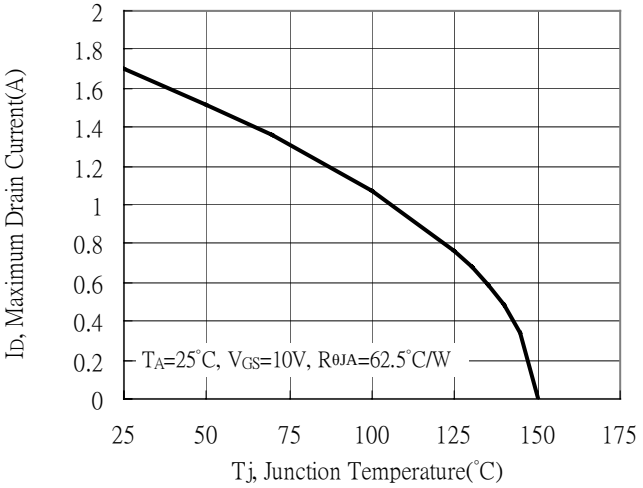
Gate Charge Characteristics



Maximum Safe Operating Area

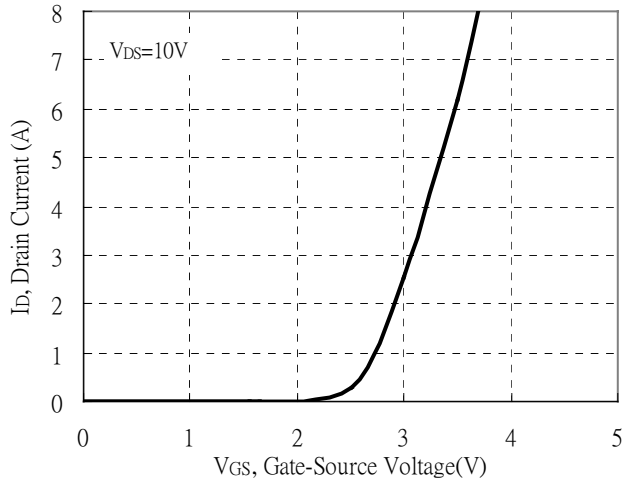


Maximum Drain Current vs Junction Temperature

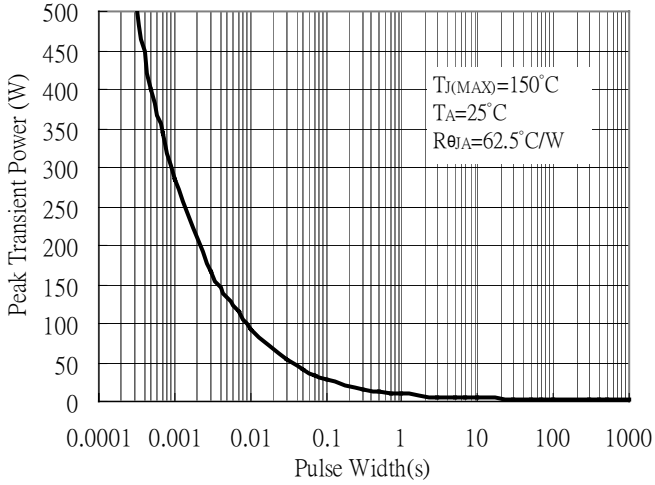


Typical Characteristics(Cont.)

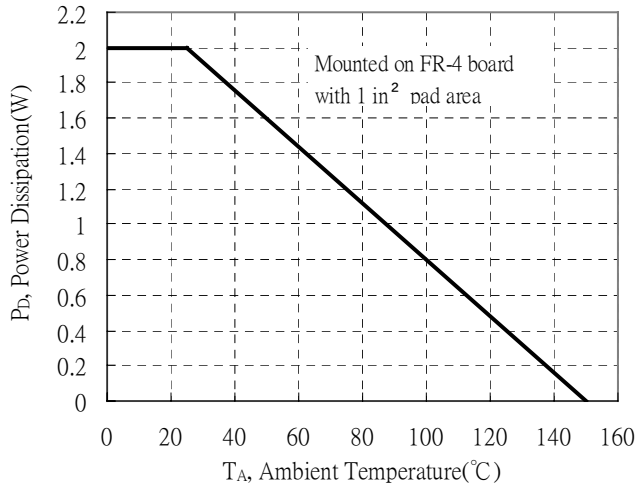
Typical Transfer Characteristics



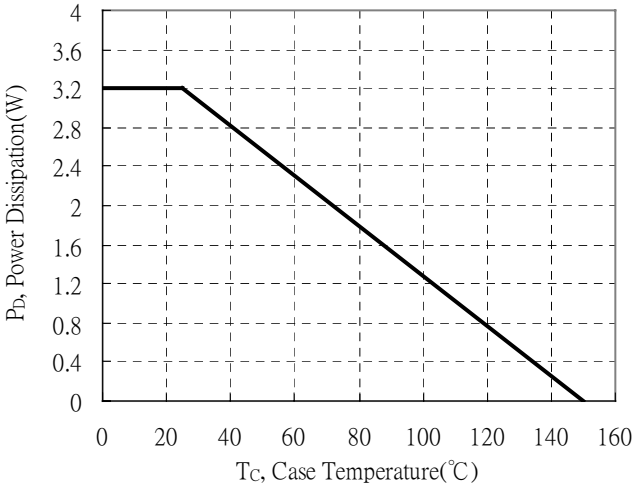
Single Pulse Maximum Power Dissipation



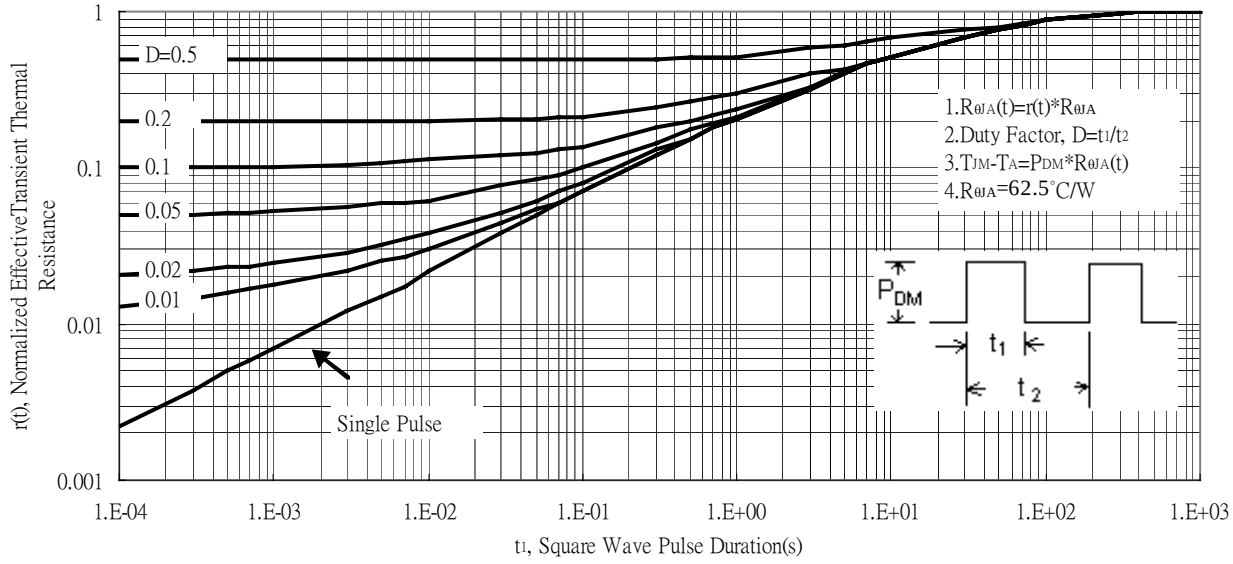
Power Derating Curve



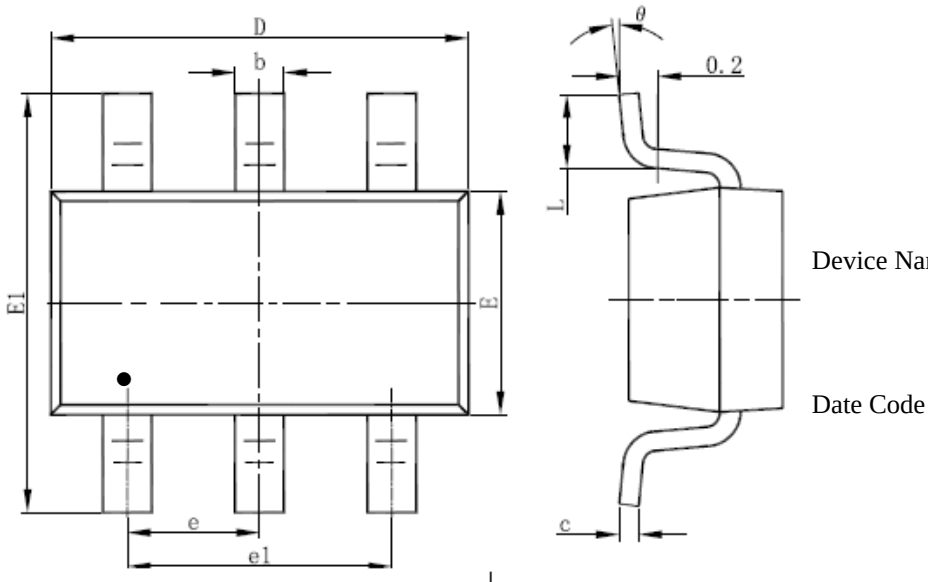
Power Derating Curve

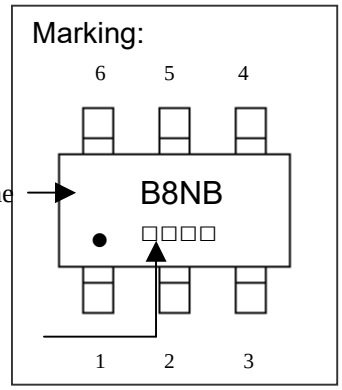


Transient Thermal Response Curves



SOT-26 Dimension





Style:
Pin 1. Drain (D)
Pin 2. Drain (D)
Pin 3. Gate (G)
Pin 4. Source (S)
Pin 5. Drain (D)
Pin 6. Drain (D)

6-Lead SOT-26 Plastic
Surface Mounted Package
Code: N6

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049	E	1.500	1.700	0.059	0.067
A1	0.000	0.100	0.000	0.004	E1	2.650	2.950	0.104	0.116
A2	1.050	1.150	0.041	0.045	e	0.950 (BSC)		0.037 (BSC)	
b	0.300	0.500	0.012	0.020	e1	1.800	2.000	0.071	0.079
c	0.100	0.200	0.004	0.008	L	0.300	0.600	0.012	0.024
D	2.820	3.020	0.111	0.119	θ	0°	8°	0°	8°