

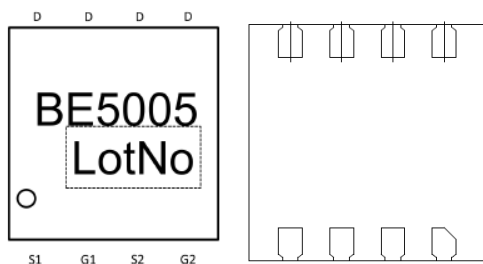
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	9.3 m Ω 4.5V	10A
	9.7m Ω @4.0V	
	10.0m Ω @3.8V	
	10.7m Ω @3.1V	
	12.5m Ω @2.5V	

DESCRIPTION

The GPBE5005 uses advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge. It is ESD protected. This device is suitable for use as a uni-directional or bi-directional load switch, facilitated by its common-drain configuration.

MARKING:



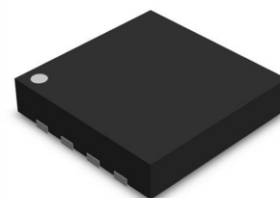
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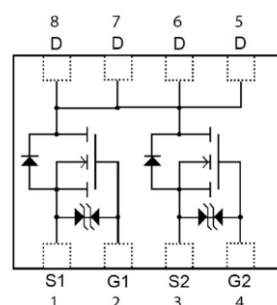
ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	10	A
Pulsed Drain Current	I_{DM}^*	60	A
Power Dissipation	P_D	1.5	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	83.3	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$
Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	T_L	260	$^{\circ}\text{C}$

DFN3 $\times$ 3-8L



Schematic diagram



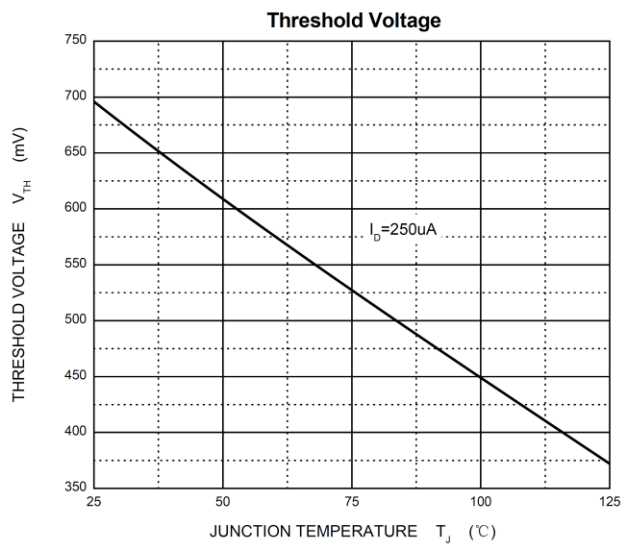
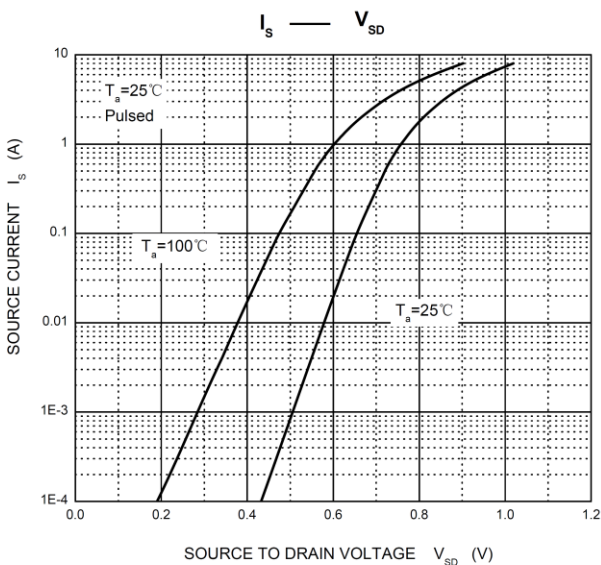
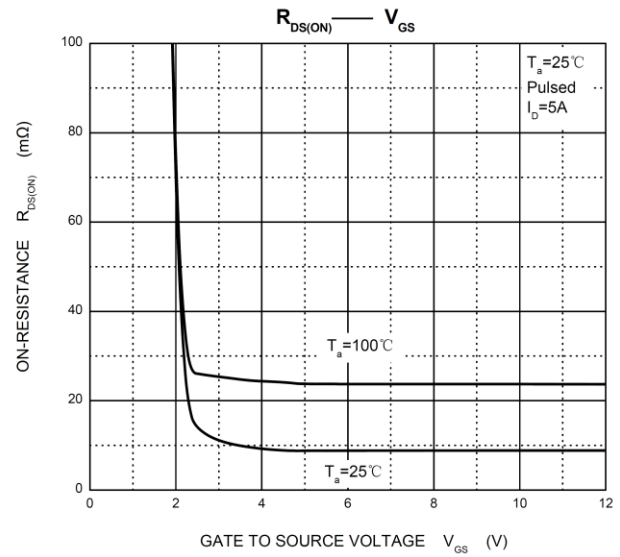
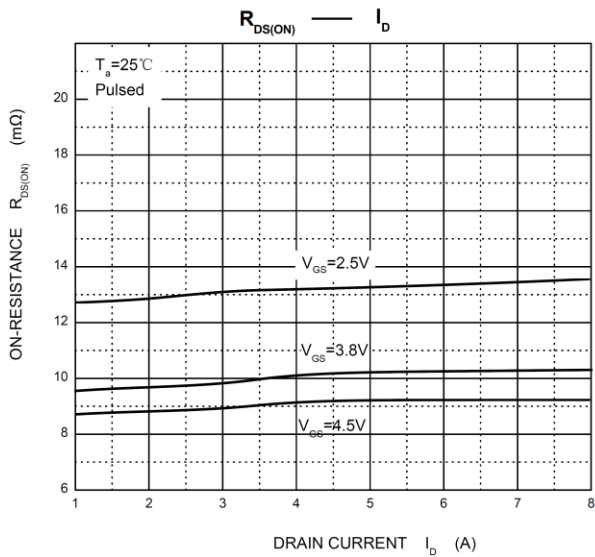
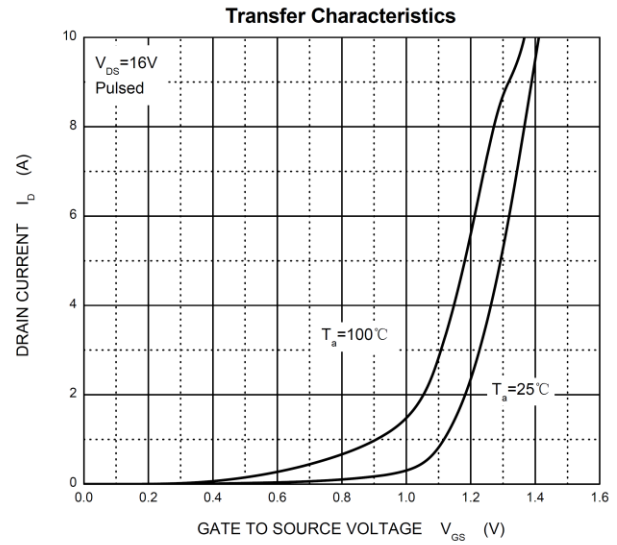
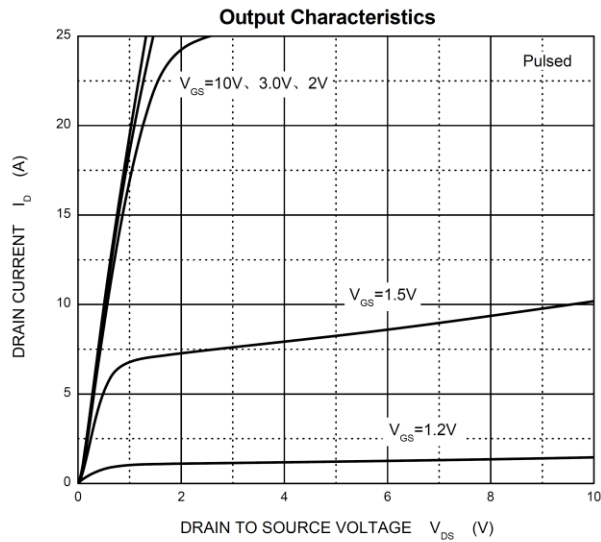
MOSFET ELECTRICAL CHARACTERISTICS($T_a=25^{\circ}\text{C}$ unless otherwise noted)

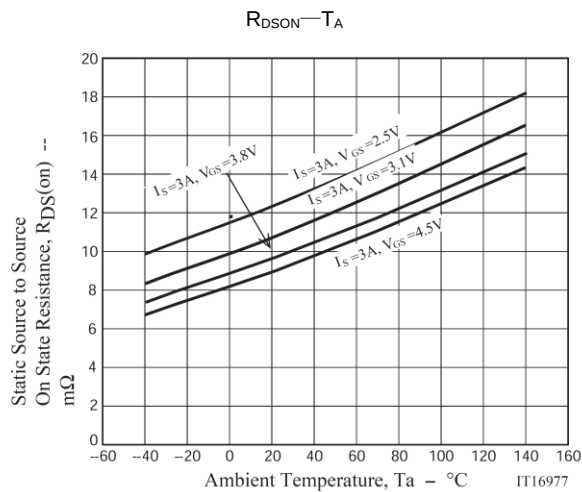
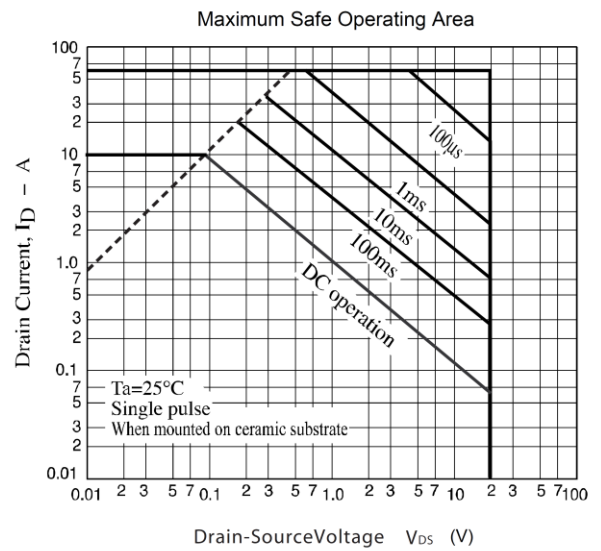
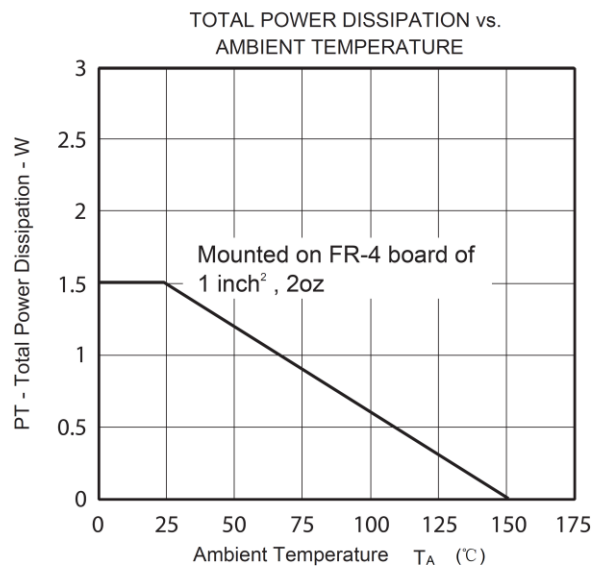
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
STATIC CHARACTERISTICS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	20			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =16V,V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±4.5V, V _{DS} = 0V			±1	μA
		V _{GS} =±8V, V _{DS} = 0V			±10	μA
Gate threshold voltage ⁽¹⁾	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.4	0.7	1.0	V
Drain-source on-resistance ⁽¹⁾	R _{DS(on)}	V _{GS} =4.5V, I _D =5A	8	9.3	11.5	mΩ
		V _{GS} =4.0V, I _D =5A	8.2	9.7	12.5	
		V _{GS} =3.8V, I _D =5A	8.5	10	13	
		V _{GS} =3.1V, I _D =5A	9	10.7	14	
		V _{GS} =2.5V, I _D =5A	9.5	12.5	17	
Forward tranconductance ⁽¹⁾	g _{FS}	V _{DS} =5V, I _D =7A	9	36		S
DYNAMIC CHARACTERISTICS ⁽²⁾						
Input Capacitance	C _{iss}	V _{DS} =10V,V _{GS} =0V,f=0.1MHz		761		pF
Output Capacitance	C _{oss}			161		
Reverse Transfer Capacitance	C _{rss}			4		
SWITCHING CHARACTERISTICS ⁽²⁾						
Turn-on delay time	t _{d(on)}	V _{GS} =5V,V _{DS} =10V,R _{GEN} =3Ω, R _{GEN} =1.35Ω		2.5		ns
Turn-on rise time	t _r			7.2		
Turn-off delay time	t _{d(off)}			49		
Turn-off fall time	t _f			108		
Total gate charge	Q _g	V _{DS} =10V,V _{GS} =4.5V,I _D =7A		17		nC
Gate-source charge	Q _{gs}			1.5		
Gate-drain charge	Q _{gd}			4.7		
SOURCE-DRAIN DIODE CHARACTERISTICS						
Body Diode Voltage ⁽¹⁾	V _{SD}	I _S =1A, V _{GS} = 0V			1	V
Continuous Source-Drain Diode Current	I _S	T _C =25℃			8	A

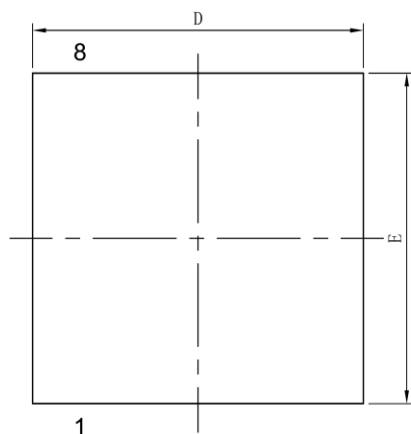
Notes :

1. Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 0.5\%$.
2. Guaranteed by design, not subject to production testing.

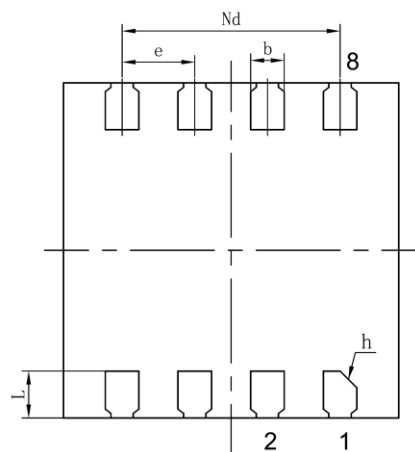
Typical Electrical and Thermal Characteristics



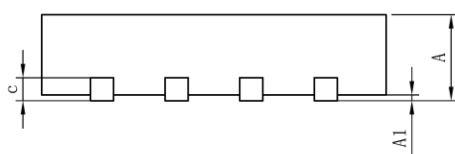


DFN3X3-8L Package Outline Dimensions(Unit:mm)


TOP VIEW



BOTTOM VIEW



SIDE VIEW

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.70	0.75	0.80
A1	0.00	0.02	0.05
b	0.25	0.30	0.35
c	0.19	0.20	0.21
D	2.90	3.00	3.10
Nd	1.90	1.95	2.00
E	2.90	3.00	3.10
e	0.65BSC		
L	0.37	0.42	0.47
h	0.10	0.15	0.20
载体尺寸 (mil)	102X84		