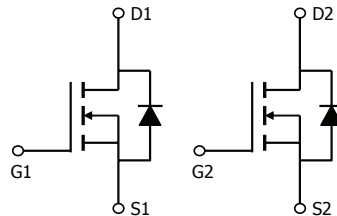


Dual N-Channel MOSFET

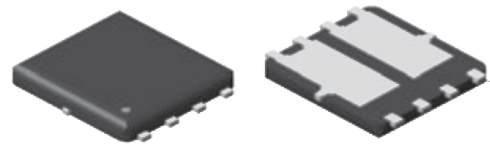
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■ Features

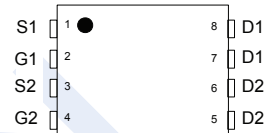
- $V_{DS} (V) = 100 V$
- $I_D = 31 A$
- $R_{DS(ON)} (at V_{GS} = 10 V) < 18 m\Omega$
- $R_{DS(ON)} (at V_{GS} = 4.5 V) < 28 m\Omega$



PDFN5x6-8A(PDFNWB5x6-8L-A)



Top View

■ Absolute Maximum Ratings ($T_C = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current (Note 1)	I_D	31	A
Pulsed Drain Current (Note 1,2)	I_{DM}	80	
Power Dissipation	P_D	35	W
Thermal Resistance. Junction to Ambient (Note 1)	$R_{\theta JA}$	62.5	$^\circ C/W$
Thermal Resistance. Junction- to-Case (Note 1)	$R_{\theta JC}$	3.5	
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

Notes:

1. Surface Mounted on $1 in^2$ pad area, $t \leq 10$ sec
2. Pulse width $\leq 10 \mu s$, duty cycle $\leq 1\%$

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■ Electrical Characteristics (TA = 25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D = 250 μA, V _{GS} = 0V	100			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 80 V, V _{GS} = 0 V			1	μA
		V _{DS} = 80 V, V _{GS} = 0 V, T _J = 85°C			30	
Gate to Source Leakage Current	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			±100	nA
On Characteristics (Note 1)						
Gate to Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.0		3.0	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10 V, I _D = 20 A			18	mΩ
		V _{GS} = 4.5 V, I _D = 10 A			28	
Dynamic Characteristics (Note 1)						
Input Capacitance	C _{iss}	V _{GS} = 0 V, V _{DS} = 50 V, f = 1 MHz		1065		pF
Output Capacitance	C _{oss}			177		
Reverse Transfer Capacitance	C _{rss}			23		
Switching Characteristics (Note 1)						
Total Gate Charge	Q _g	V _{GS} = 10V, V _{DS} = 50 V, I _D = 20 A		24		nC
Gate Source Charge	Q _{gs}			5		
Gate Drain Charge	Q _{gd}			6		
Turn-On DelayTime	t _{d(on)}	V _{DS} = 50 V, V _{GEN} = 10 V, R _G = 4.5 Ω, R _L = 2.5 Ω, I _D = 20 A		7		ns
Turn-On Rise Time	t _r			26		
Turn-Off DelayTime	t _{d(off)}			19		
Turn-Off Fall Time	t _f			21		
Drain-Source Diode Characteristics						
Body Diode Reverse Recovery Time	t _{rr}	I _{SD} = 20A, di _{SD} /dt = 100 A/μs,		51		ns
Body Diode Reverse Recovery Charge	Q _{rr}			52		nC
Diode Forward Voltage	V _{SD}	V _{GS} = 0 V, I _S = 20 A		0.7	1.3	V

Notes:

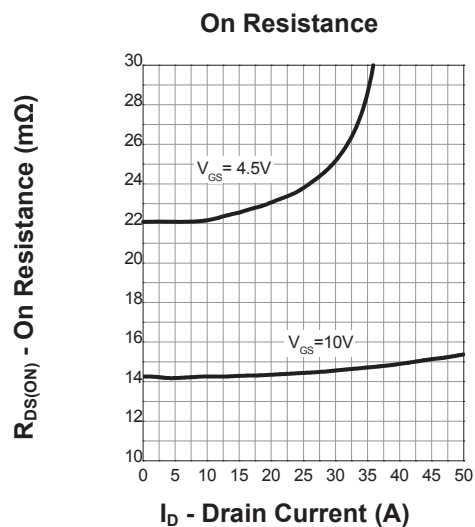
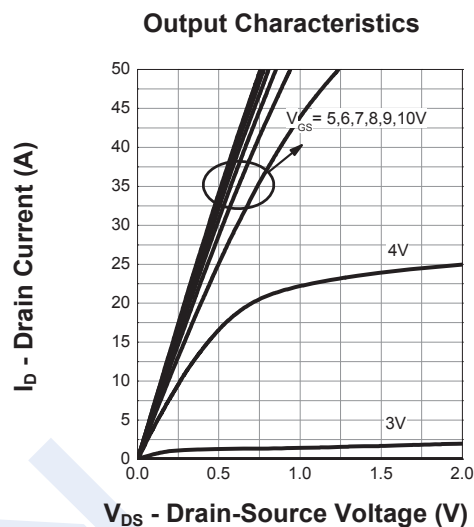
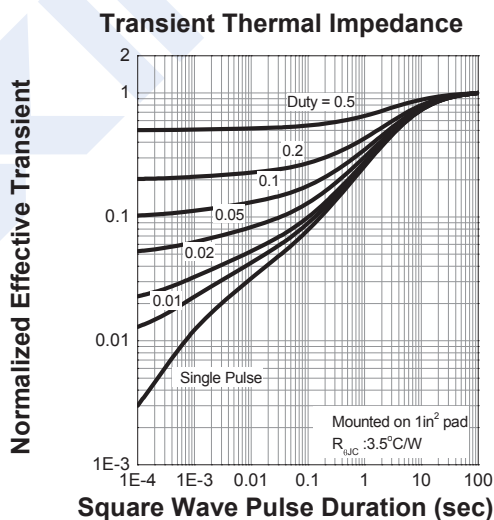
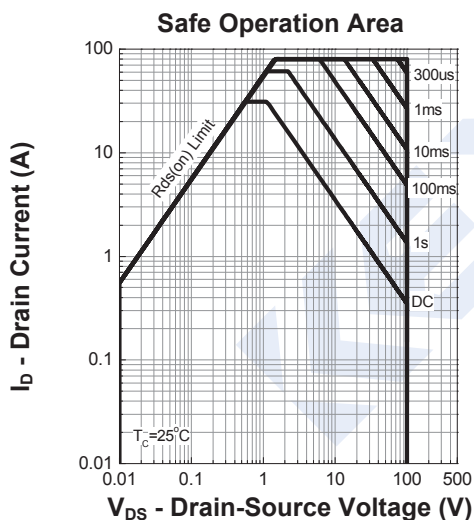
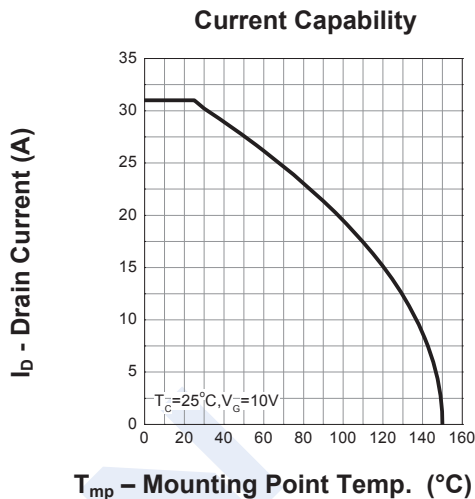
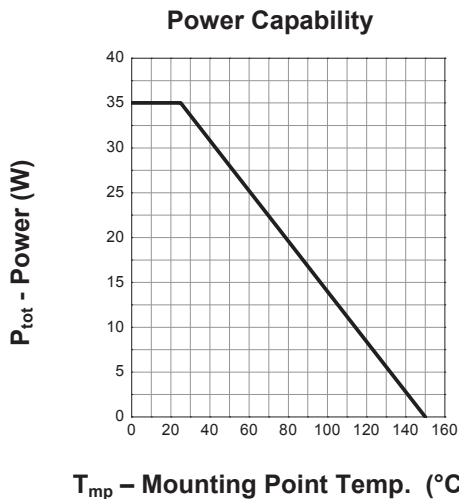
1. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
2. Guaranteed by design, not subject to production testing.

■ Marking

Marking	K5780 KC****
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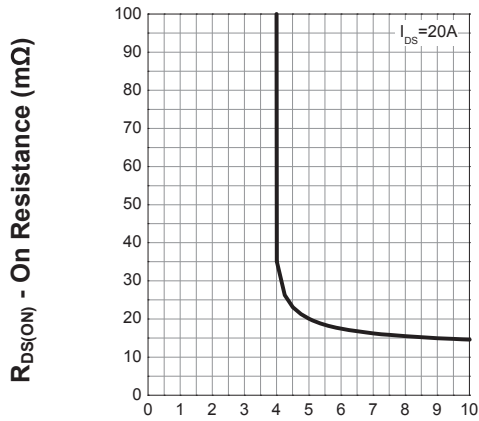
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■ Typical Characteristics $T_J = 25^\circ\text{C}$ unless otherwise specified



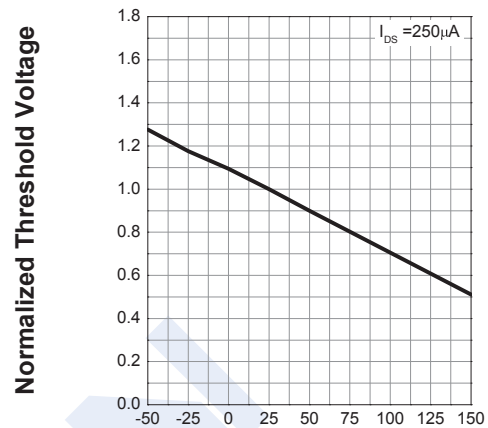
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Transfer Characteristics



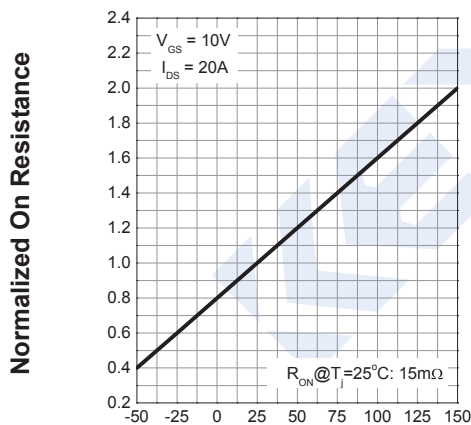
V_{GS} - Gate-Source Voltage (V)

Normalized Threshold Voltage



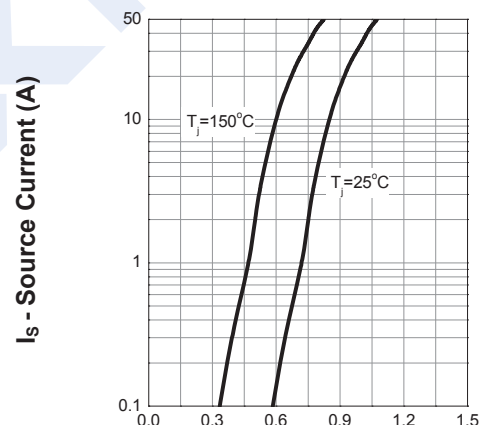
T_J - Junction Temperature ($^{\circ}C$)

Normalized On Resistance



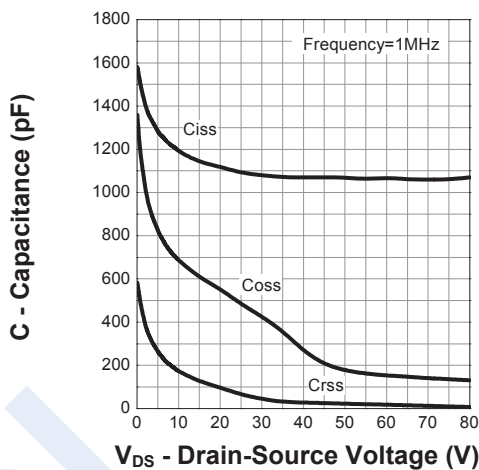
T_J - Junction Temperature ($^{\circ}C$)

Diode Forward Current



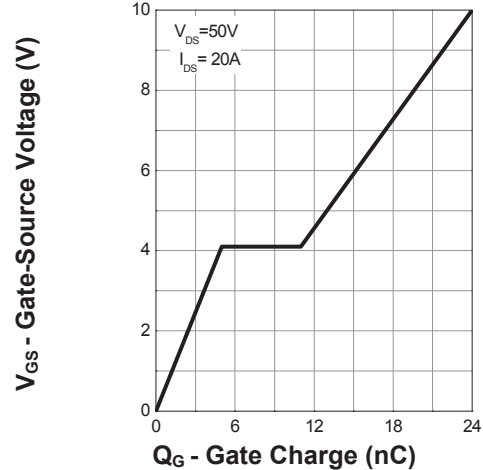
V_{SD} - Source-Drain Voltage (V)

Capacitance



V_{DS} - Drain-Source Voltage (V)

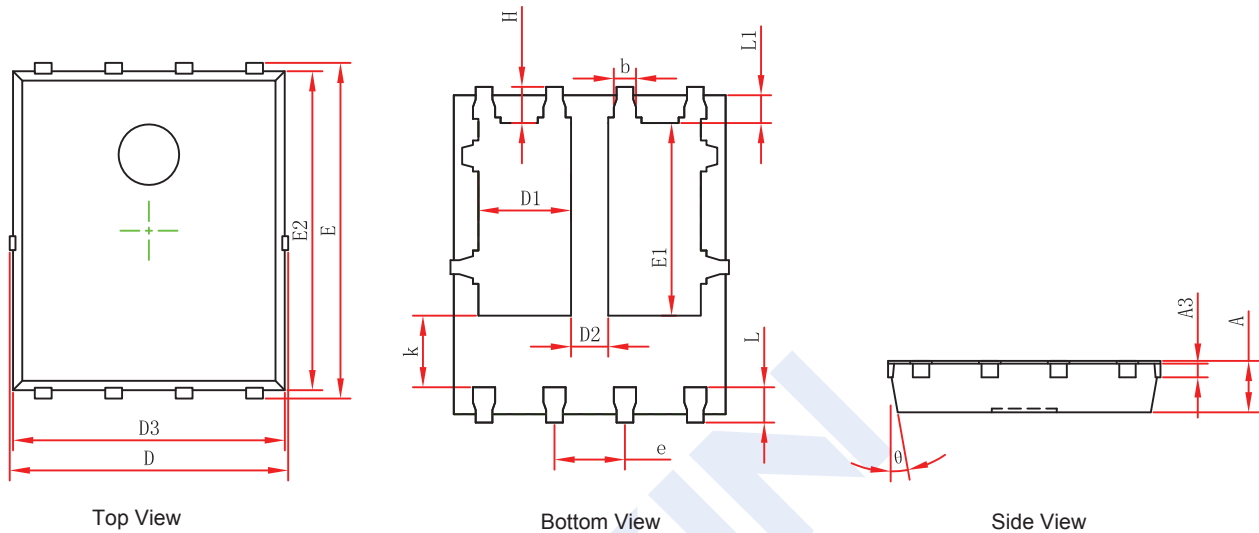
Gate Charge



Q_G - Gate Charge (nC)

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■ PDFN5x6-8A(PDFNWB5x6-8L-A) Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254 REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	1.470	1.870	0.058	0.074
D2	0.470	0.870	0.019	0.034
E1	3.375	3.575	0.133	0.141
D3	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	10°	12°	10°	12°