

Features

- Low FOM $R_{DS(on)} \times Q_{gd}$
- 100% avalanche tested
- Easy to use/drive
- RoHS compliant

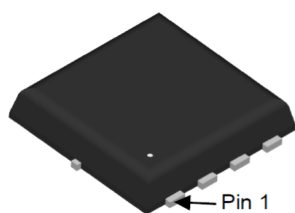
Application

- Power Switch Circuit of Adaptor and Charger
- Battery Protection Charge/Discharge
- Notebook AC-in Load Switch

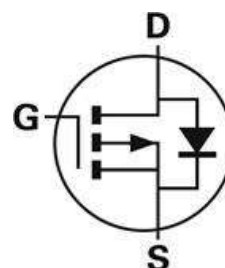
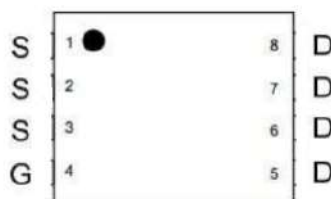
Product Summary



V_{DS}	-30	V
$R_{DS(on), TYP @ V_{GS}=10V}$	5.7	m Ω
I_D	-55	A



DFN3*3-8



Maximum Ratings $T_A = 25^\circ\text{C}$, unless otherwise noted

	Symbol	Values	Unit
-Source voltage ($V_{GS}=0V$)	V_{DS}	-30	V
Drain Current ²⁾	I_D	$c = 25^\circ\text{C}$ -55	A
		$c = 100^\circ\text{C}$ -34.6	
Drain Current ³⁾	$I_{D,pulse}$	-220	A
-Source Voltage	V_{GSS}	± 20	V
	E_{AS}	200	mJ
Dissipation	P_D	31.2	W
Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	$^\circ\text{C}$

Parameter	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	R_{thJC}	4	$^\circ\text{C/W}$
Thermal Resistance, Junction-to-Ambient	R_{thJA}	35	$^\circ\text{C/W}$

Notes

- 1) $L=0.5\text{mH}$, $V_{DD}=-15V$, Start $T_J=25^\circ\text{C}$
- 2) Limited by maximum junction temperature.
- 3) Repetitive Rating: Pulse width limited by maximum junction temperature.

Electrical Characteristics T _J = 25°C, unless otherwise noted						
Parameter	Symbol	Test Conditions	Value			Unit
			Min.	Typ.	Max.	
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-30	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -30V V _{GS} = 0V, T _J = 25°C	--	--	-1	μA
		V _{DS} = -24V, V _{GS} = 0V, T _J = 125°C	--	--	-100	
Gate-Source Leakage Current	I _{GSS}	V _{GS} = ± 20V	--	--	± 100	nA
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1.0	-1.5	-2.5	V
Drain-Source On-State-Resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -20A	--	5.7	8	mΩ
		V _{GS} = -4.5V, I _D = -20A	--	7.7	11	mΩ
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -15V f = 1.0MHz	--	2731	--	pF
Output Capacitance	C _{oss}		--	312	--	
Reverse Transfer Capacitance	C _{rss}		--	241	--	
Total Gate Charge	Q _g	V _{DS} = -15V , I _D = -10A V _{GS} = -10V	--	61	--	nC
Gate-Source Charge	Q _{gs}		--	12	--	
Gate-Drain Charge	Q _{gd}		--	10	--	
Gate Plateau Voltage	V _{Plateau}		--	3.1	--	V
Turn-on Delay Time	t _{d(on)}	V _{DS} = -15V , V _{GS} = -10V R _G = 3Ω, I _D = -10A	--	19	--	ns
Turn-on Rise Time	t _r		--	33	--	
Turn-off Delay Time	t _{d(off)}		--	38	--	
Turn-off Fall Time	t _f		--	15	--	
Drain-Source Body Diode Characteristics						
Body Diode Forward Voltage	V _{SD}	T _J = 25°C, I _{SD} = -10A, V _{GS} = 0V	--	--	-1.2	V
Continuous Diode Forward Current	I _S		--	--	-55	A
Reverse Recovery Time	t _{rr}	I _F = -10A, di _F /dt = -100A/μs	--	45	--	ns
Reverse Recovery Charge	Q _{rr}		--	29	--	nC

Typical Characteristics $T_J = 25^\circ\text{C}$, unless otherwise noted

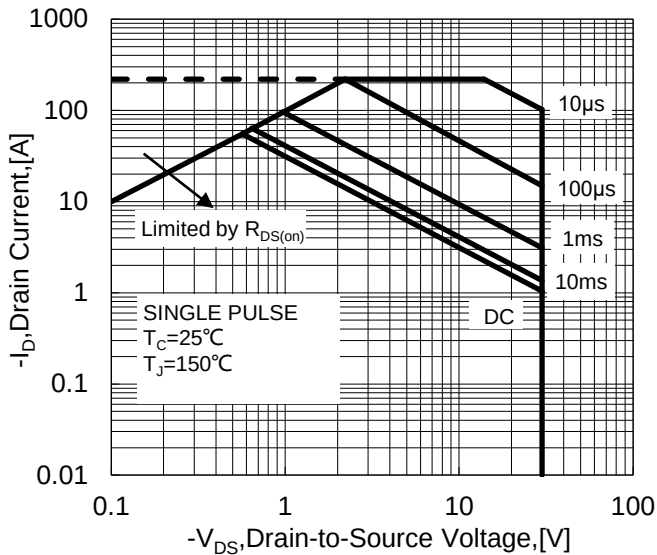


Figure 1. Maximum Safe Operating Area

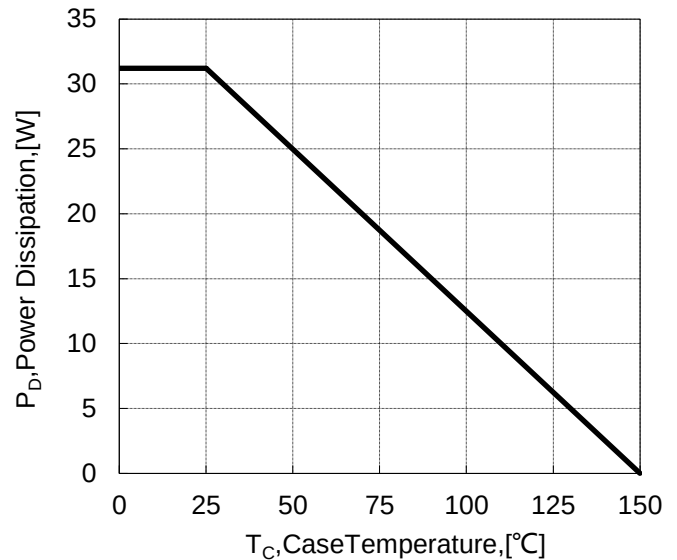


Figure 2. Maximum Power Dissipation vs Case Temperature

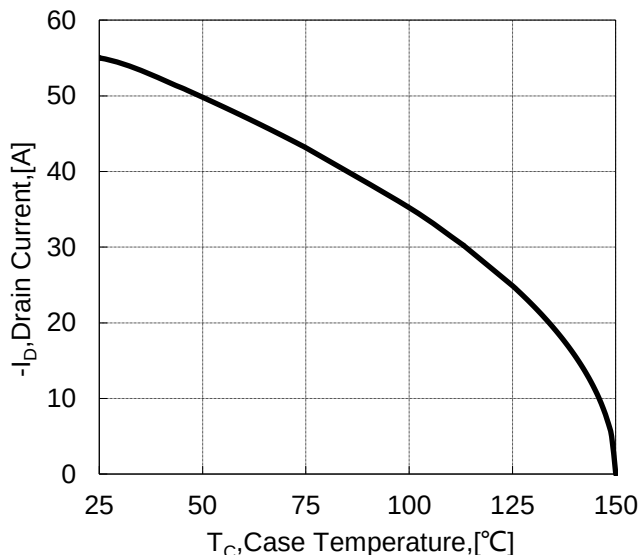


Figure 3. Maximum Continuous Drain Current vs Case Temperature

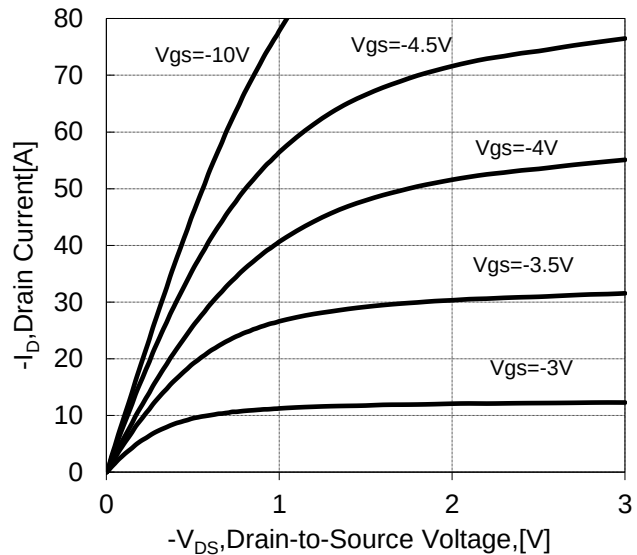
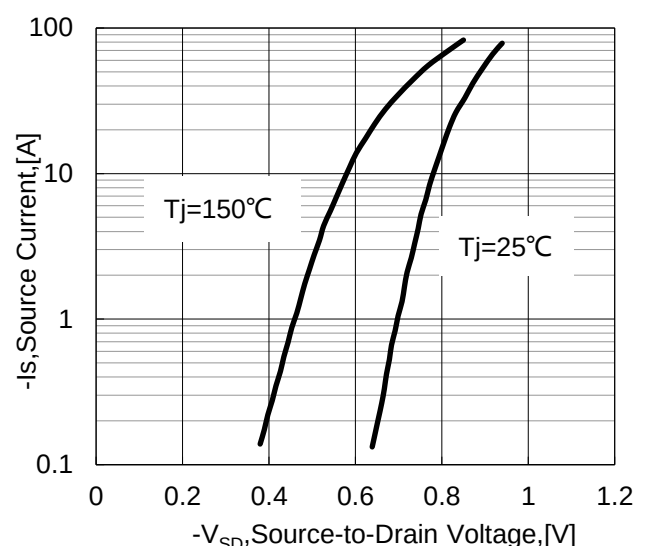
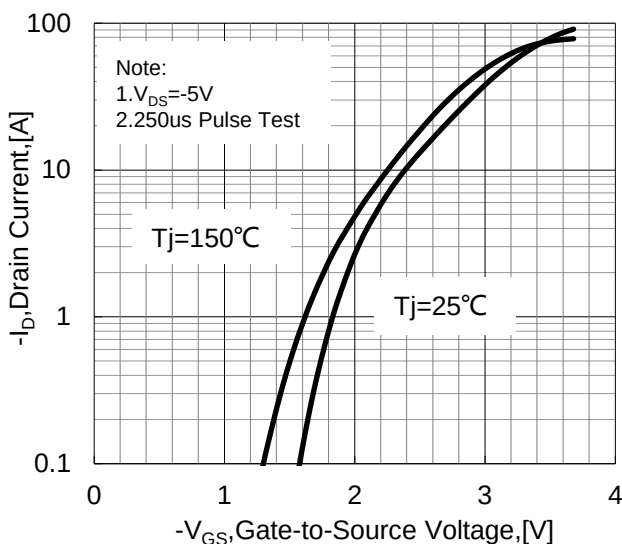
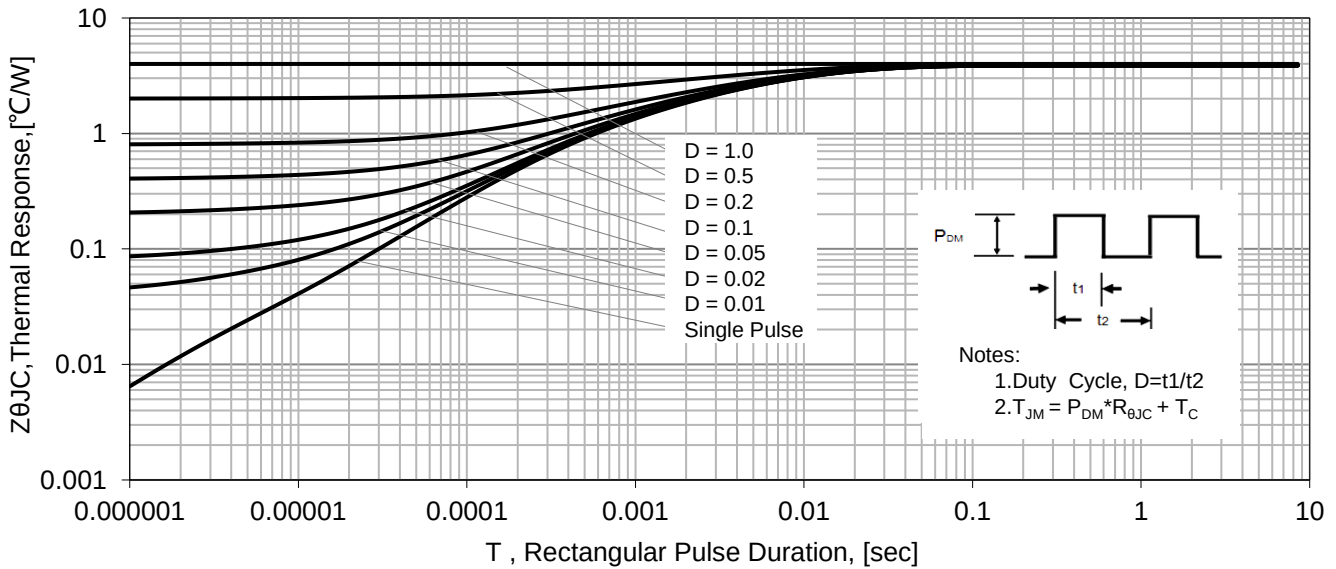


Figure 4. Typical output Characteristics

Typical Characteristics $T_J = 25^\circ\text{C}$, unless otherwise noted



Typical Characteristics $T_J = 25^\circ\text{C}$, unless otherwise noted

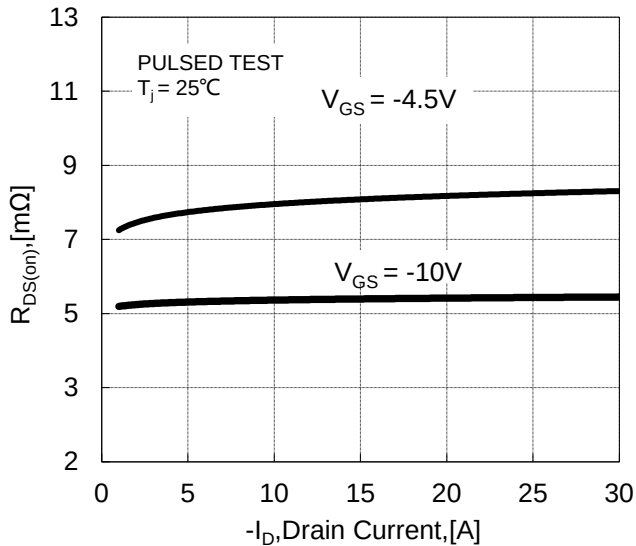


Figure 8. Drain-to-Source On Resistance vs Drain Current

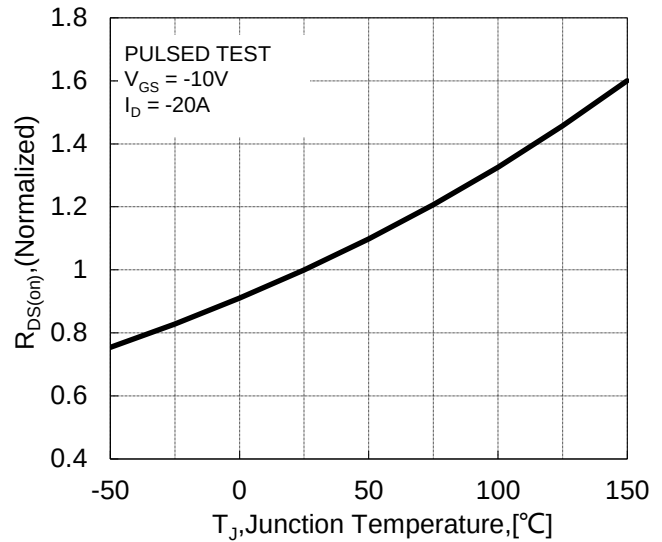


Figure 9. Normalized On Resistance vs Junction Temperature

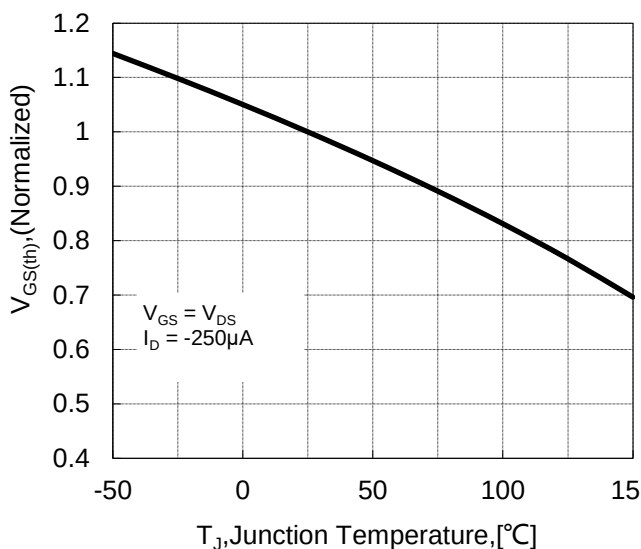


Figure 10. Normalized Threshold Voltage vs Junction Temperature

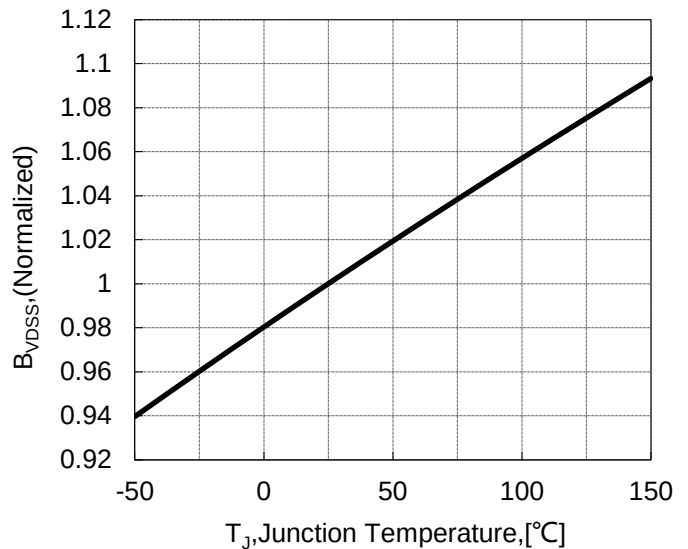


Figure 11. Normalized Breakdown Voltage vs Junction Temperature

Typical Characteristics $T_J = 25^\circ\text{C}$, unless otherwise noted

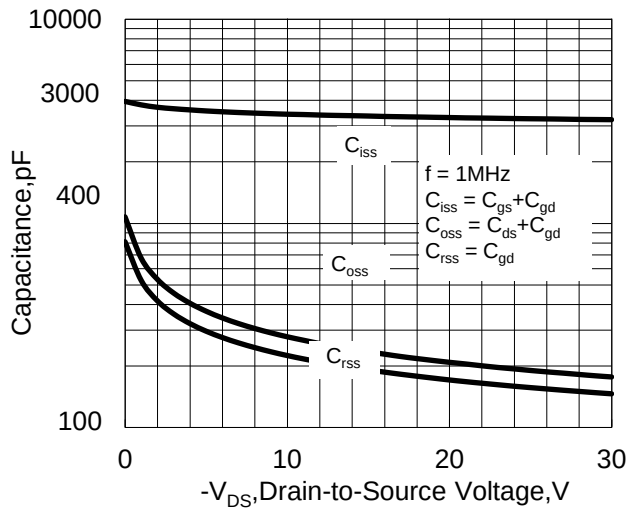


Figure 12. Capacitance Characteristics

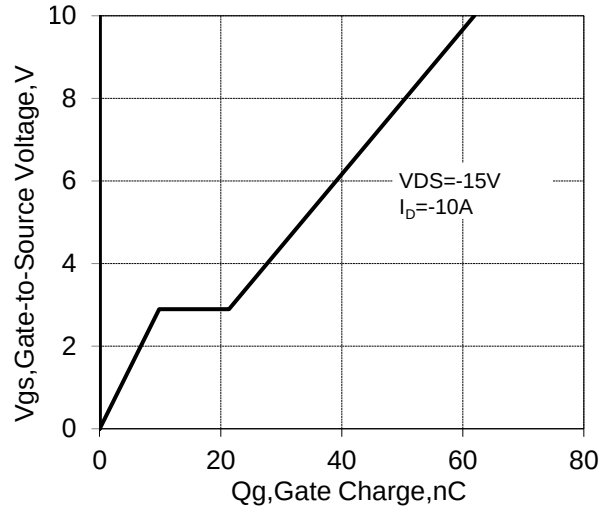
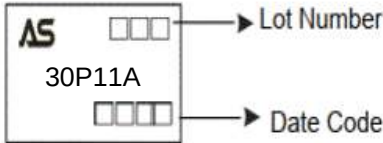


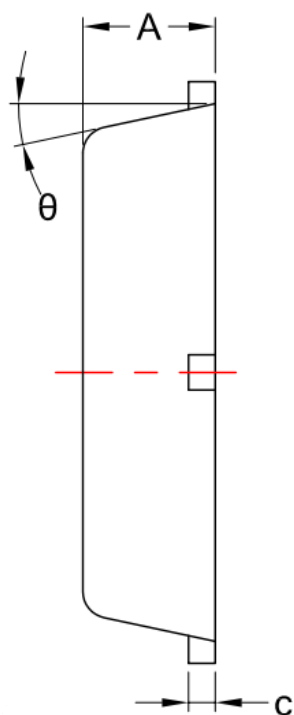
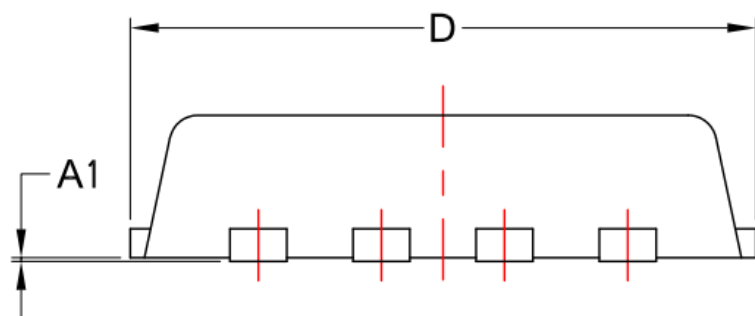
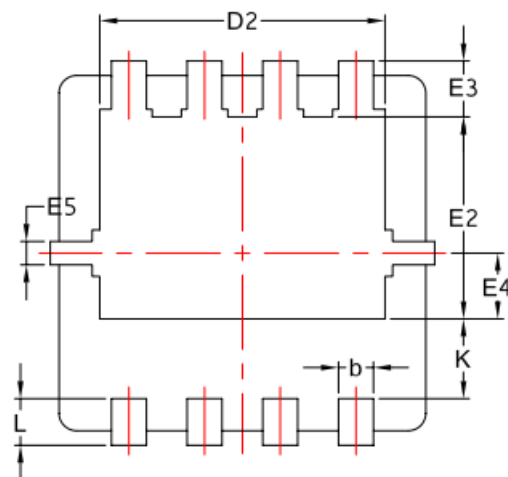
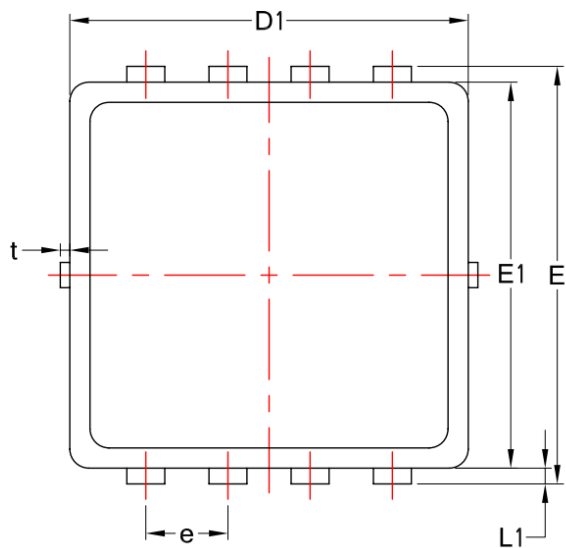
Figure 13 Typical Gate Charge vs Gate to Source Voltage

Ordering and Marking Information

Ordering Device No.	Marking	Package	Packing	Quantity
ASDM30P11ATD-R	30P11A	DFN3*3-8	Tape&Reel	5000/Reel

PACKAGE	MARKING
DFN3*3-8	 AS □□□□ → Lot Number 30P11A □□□□ → Date Code

DFN3*3-8 Package



SYMBOL	COMMON		
	MM		
	MIN	NOM	MAX
A	0.70	0.75	0.85
A1	/	/	0.05
b	0.20	0.30	0.40
c	0.10	0.152	0.25
D	3.15	3.30	3.45
D1	3.00	3.15	3.25
D2	2.29	2.45	2.65
E	3.15	3.30	3.45
E1	2.90	3.05	3.20
E2	1.54	1.74	1.94
E3	0.28	0.48	0.65
E4	0.37	0.57	0.77
E5	0.10	0.20	0.30
e	0.60	0.65	0.70
K	0.59	0.69	0.89
L	0.30	0.40	0.50
L1	0.06	0.125	0.20
t	0	0.075	0.13
θ	10°	12°	14°

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