Features

- Surface-mounted package
- Advanced trench cell design

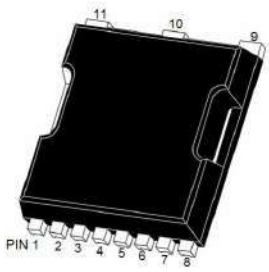
Application

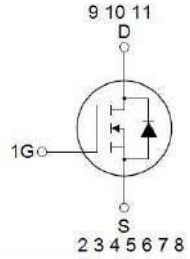
- LCD TV appliances
- High power inverter system
- LCDM appliances

Product Summary

V_{DS}	60	V
$R_{DS(on),Typ}$@ V_{GS}=10 V	0.64	mΩ
I_D	400	A

TOLL





1. Limiting Values

Symbol	Parameter	Conditions	Min	Max	Unit
V_{DS}	Drain-Source Voltage	T_C = 25 ℃	-	60	V
V_{GS}	Gate-Source Voltage	T_C = 25 ℃	-	± 20	V
I_D*	Drain Current (DC)	T_C = 25 ℃, V_{GS} = 10 V	-	400	A
		T_C = 100 ℃, V_{GS} = 10 V	-	362	A
I_{DM}*,**	Drain Current (Pulsed)	T_C = 25 ℃, V_{GS} = 10 V	-	1600	A
P_{tot}*	Drain power dissipation	T_C = 25 ℃	-	375	W
T_{stg}	Storage Temperature		- 55	175	℃
T_J	Junction Temperature		-	175	℃
I_S	Continuous-Source Current	T_C = 25 ℃	-	400	A
E_{AS}*	Single Pulsed Avalanche Energy	V_{DD}= 50 V , L= 1 mH	-	2738	mJ
$R_{\theta JA}$*	Thermal Resistance- Junction to Ambient		-	40	℃/W
$R_{\theta JC}$*	Thermal Resistance- Junction to Case		-	0.4	

Notes：

* Surface Mounted on 1 in^2 pad area, t ≤ 10 sec

** Pulse width ≤ 300 μs, duty cycle ≤ 2 %

*** Limited by bonding wire

2. Electrical Characteristics (T_A=25 ° Unless Otherwise Noted)

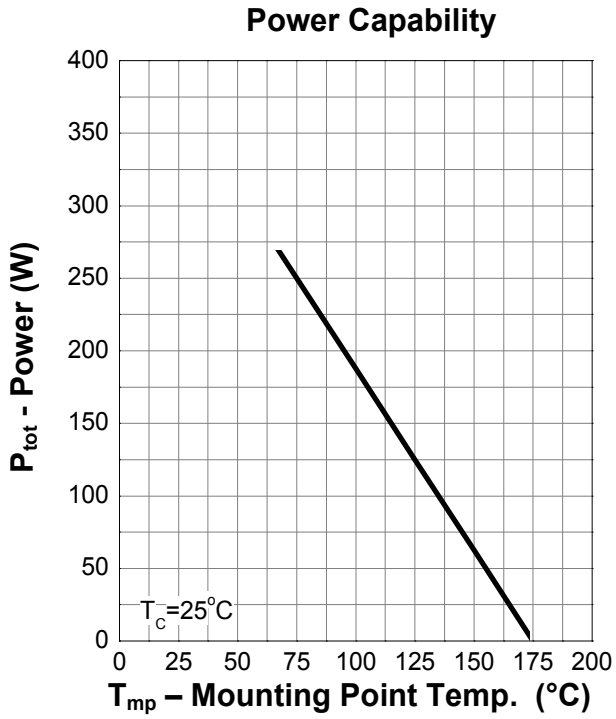
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS} = 0 V, I_{DS} = 250 μA	60	-	-	V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_{DS} = 250 μA	2	3	4	V
I_{DSS}	Drain Leakage Current	V_{DS} = 48 V, V_{GS} = 0 V	-	-	1	μA
I_{GSS}	Gate Leakage Current	V_{DS} = 0 V, V_{GS} = ± 20 V	-	-	±100	nA
$R_{DS(ON)}$[a]	On-State Resistance	V_{GS} = 10 V, I_{DS} = 20 A	-	0.64	0.77	mΩ
Diode Characteristics						
V_{SD}[a]	Diode Forward Voltage	I_{SD} = 20 A, V_{GS} = 0 V	-	-	1.3	V
t_{rr}	Reverse Recovery Time	I_{DS} = 20 A, V_{GS} = 0 V dI_{SD}/dt = 100 A/μs	-	115	-	nS
Q_{rr}	Reverse Recovery Charge		-	377	-	nC
Dynamic Characteristics[b]						
C_{iss}	Input Capacitance	V_{GS} = 0 V, V_{DS} = 30 V Frequency = 1 MHz	-	15766	-	pF
C_{oss}	Output Capacitance		-	4340	-	
C_{rss}	Reverse Transfer Capacitance		-	1822	-	
t_d(on)	Turn-on Delay Time	V_{DS} = 30 V, V_{GEN} = 10 V, R_G = 3.9 Ω, R_L = 1.5 Ω, I_{DS} = 20 A	-	46	-	nS
t_r	Turn-on Rise Time		-	73	-	
t_d(off)	Turn-off Delay Time		-	161	-	
t_f	Turn-off Fall Time		-	88	-	
Gate Charge Characteristics[b]						
Q_g	Total Gate Charge	V_{DS} = 30 V, V_{GS} = 10 V, I_{DS} = 20 A	-	274	-	nC
Q_{gs}	Gate-Source Charge		-	96	-	
Q_{gd}	Gate-Drain Charge		-	53	-	

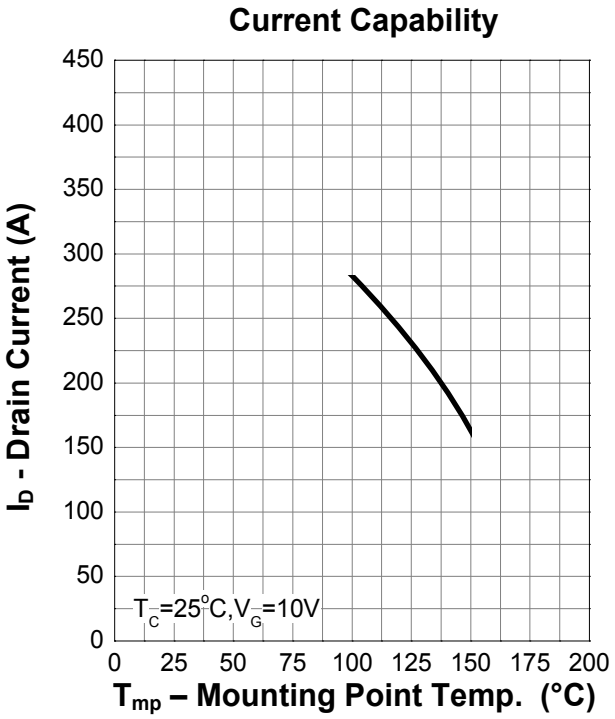
Notes：

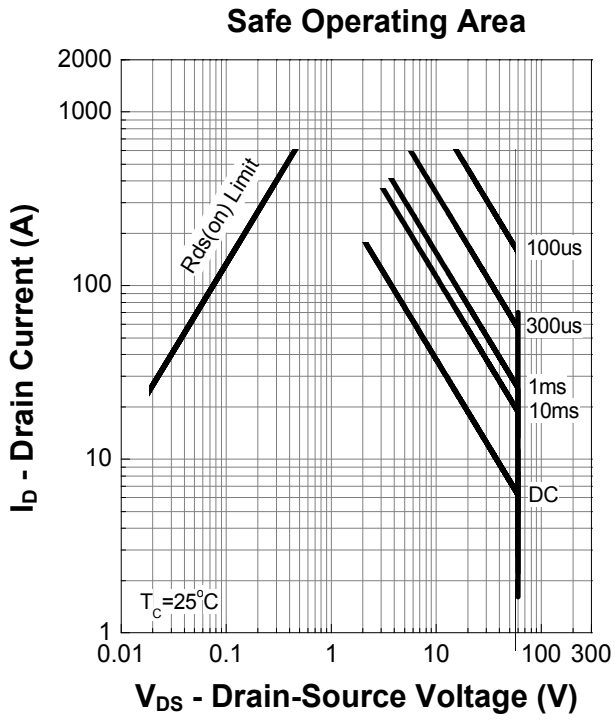
a : Pulse test ; pulse width ≤ 300 μs, duty cycle ≤ 2%

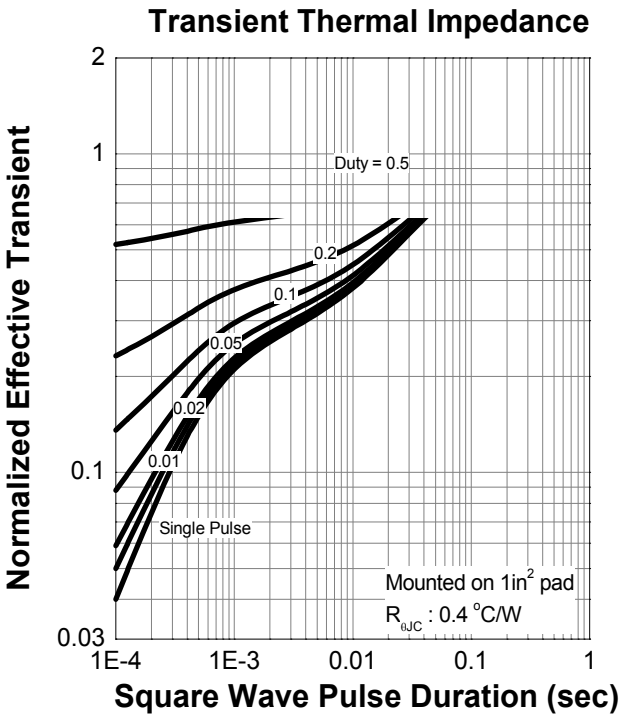
b : Guaranteed by design, not subject to production testing

3. Typical Characteristics

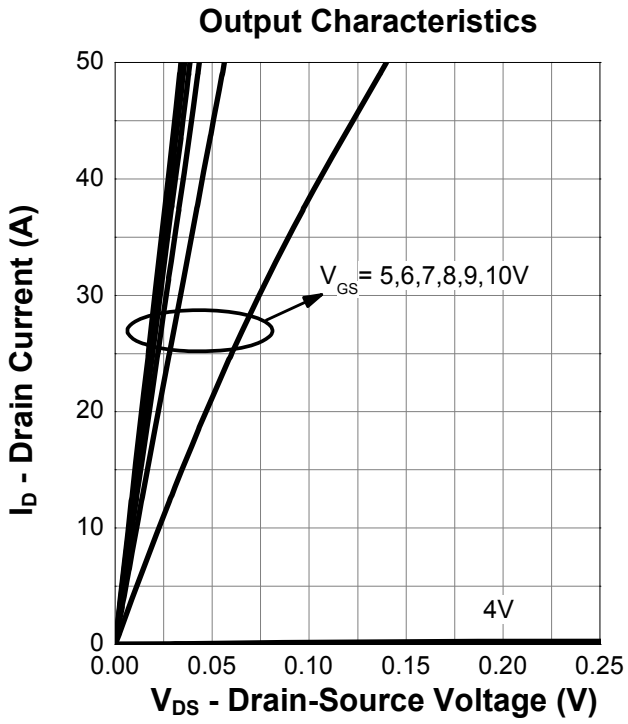


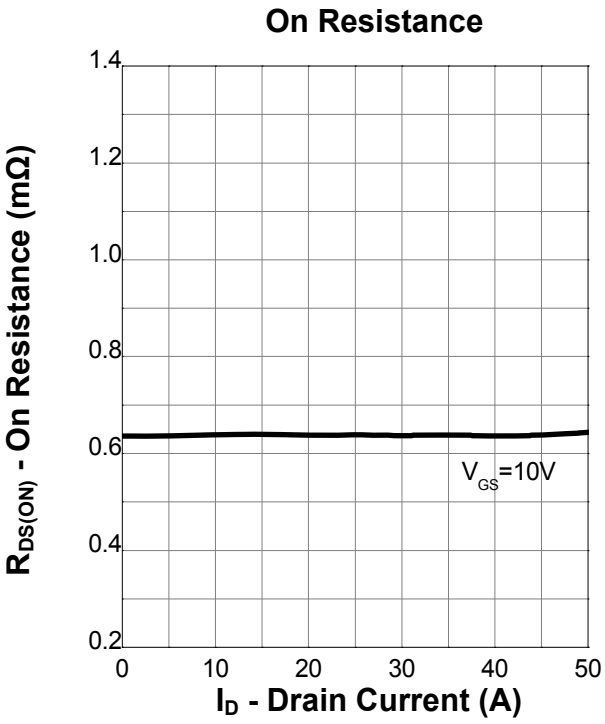


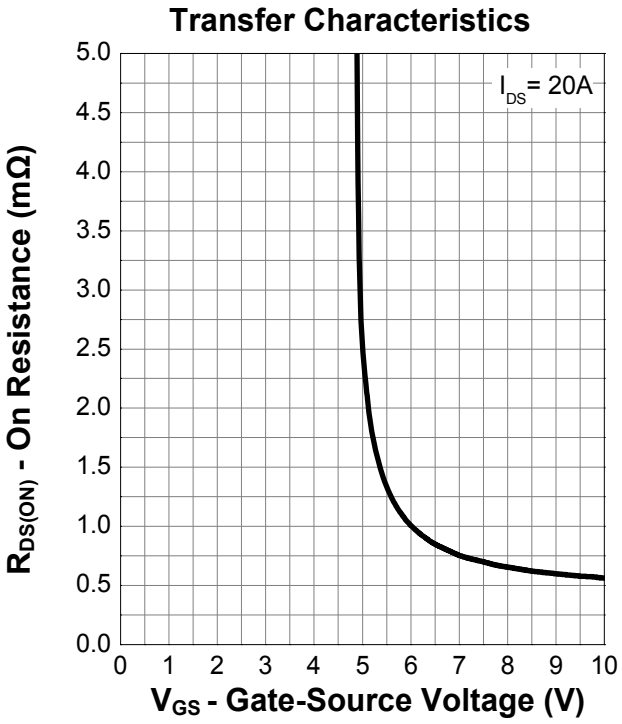


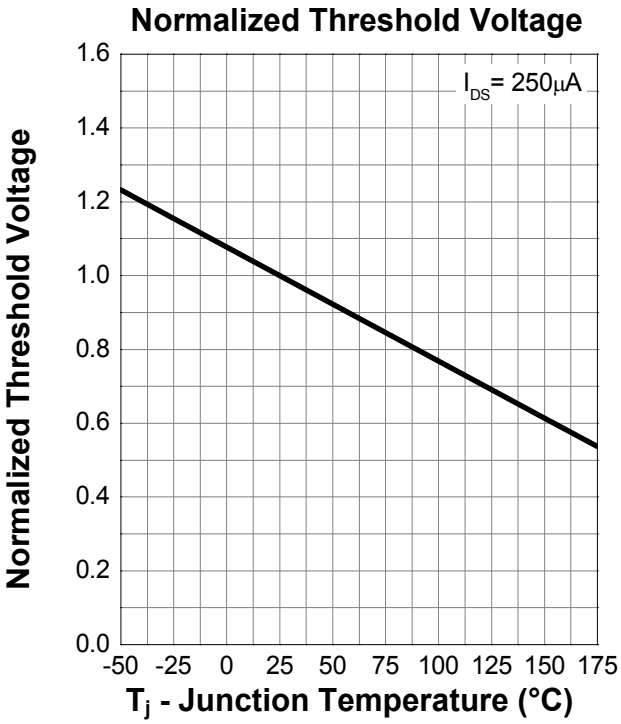


4. Typical Characteristics (cont.)

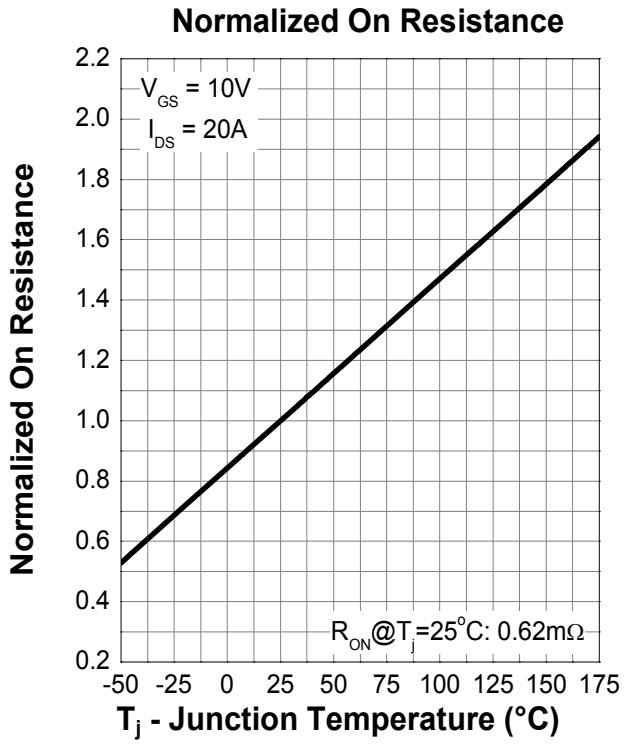


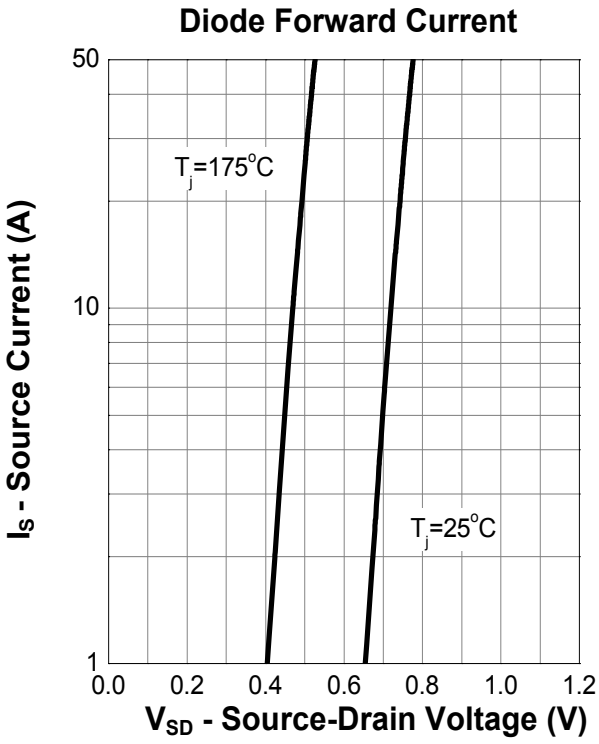


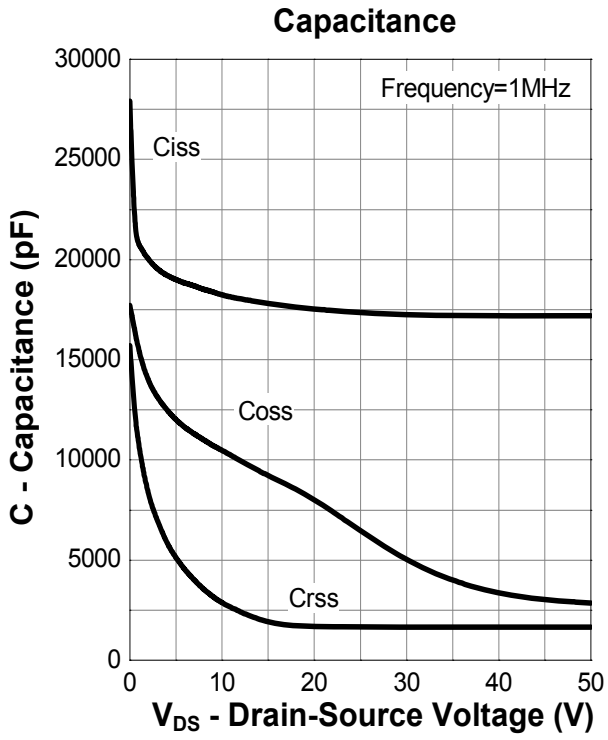


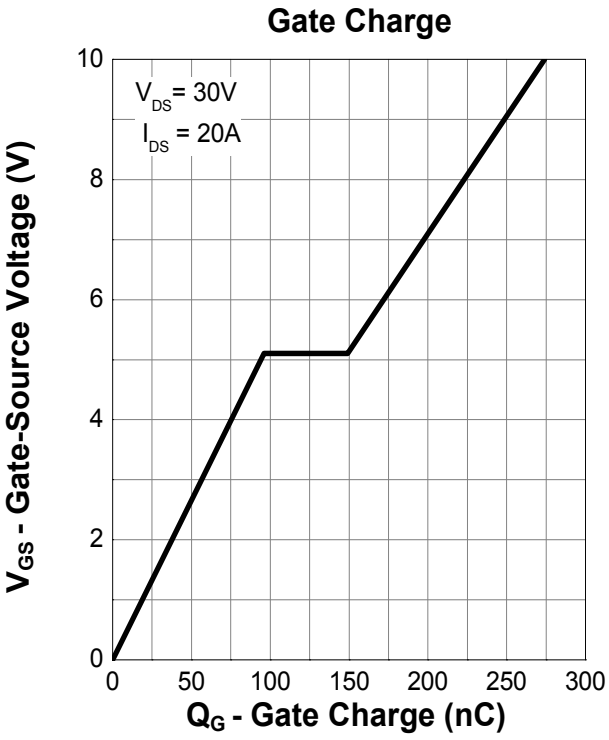


5. Typical Characteristics (cont.)



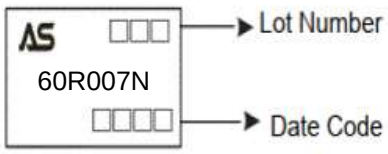






Ordering and Marking Information

Ordering Device No.	Marking	Package	Packing	Quantity
ASDM60R007NHT-R	60R007N	TOLL	Tape&Reel	2000/Reel

PACKAGE	MARKING
TOLL	

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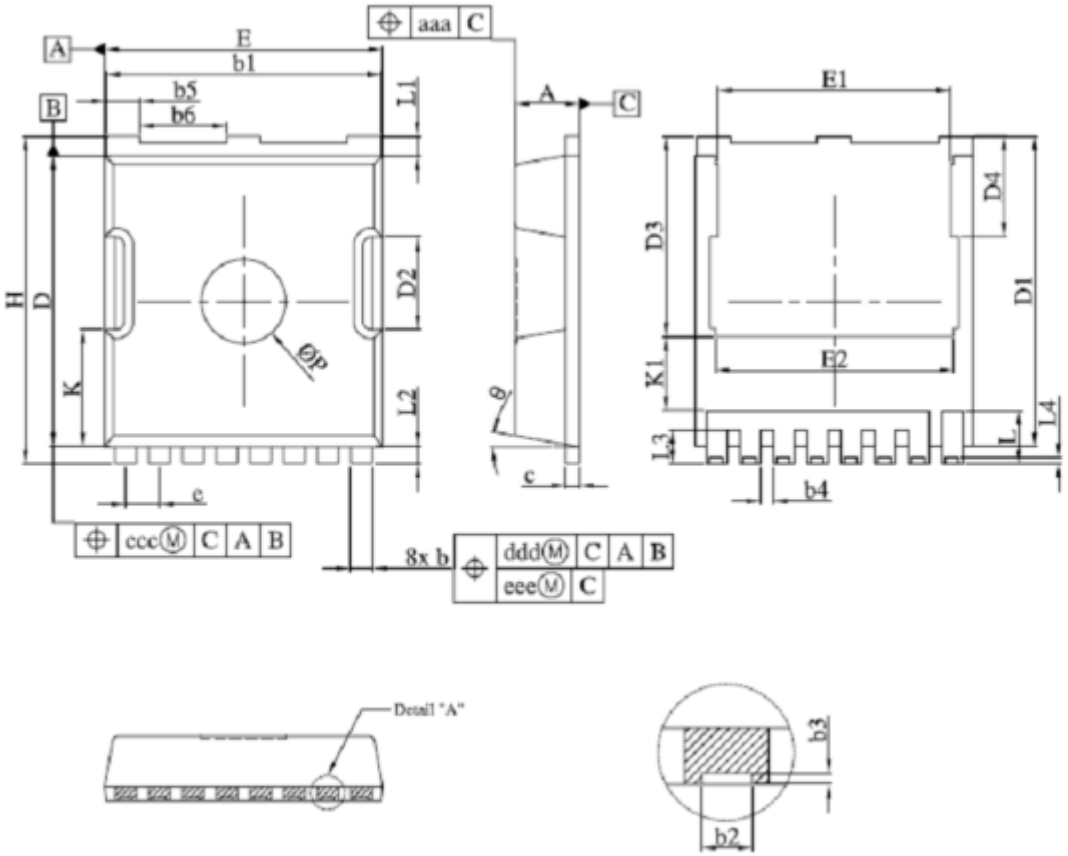

SYMBOL	COMMON MILLIMETER		
	MIN.	NOMINAL	MAX.
A	2.20	2.30	2.40
b	0.70	0.80	0.90
b1	9.70	9.80	9.90
b2	0.86	0.45	0.55
b3	0.05	0.100	0.35
b4	0.90	0.40	0.50
b5	1.10	1.20	1.30
b6	3.00	3.10	3.20
c	0.40	0.50	0.60
D	10.28	10.38	10.55
D1	10.98	11.08	11.18
D2	3.20	3.30	3.40
D3	7.00	7.15	7.30
D4	3.44	3.59	3.74
e	1.10	1.20	1.30
E	9.80	9.90	10.00
E1	8.20	8.30	8.40
E2	8.35	8.50	8.65
H	11.50	11.68	11.85
K	4.08	4.18	4.28
K1	2.45	—	—
L	1.60	1.90	2.10
L1	0.50	0.70	0.90
L2	0.50	0.60	0.70
L3	1.00	1.20	1.50
L4	0.13	0.23	0.33
P	2.85	3.00	3.15
θ	10° REF		
aaa	0.20		
ccc	0.20		
ddd	0.25		
eee	0.20		

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