

preliminary

CMY12603NL-252

30V N-Channel Fast Switching MOSFET

Features

- Super Low Gate Charge
- 100% EAS Guaranteed
- Green Device Available
- Excellent CdV/dt effect decline
- Advanced high cell density Trench technology

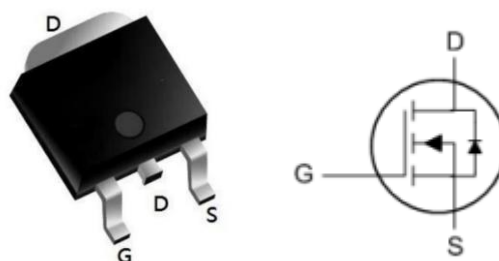
Product Summary

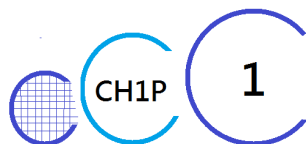
Item	Typical Value	Unit
V_{DS}	30	V
$R_{DS(on)} @ V_{GS} = 10V (Max)$	8.5	$m\Omega$
I_D	52	A

Applications

- Portable Equipment
- Battery Powered System

TO252 Pin Description





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Absolute Ratings ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current, $T_C = 25^{\circ}\text{C}/100^{\circ}\text{C}$	I_D	55/40	A
Pulsed Drain Current	I_{DM}	110	A
Single Pulse Avalanche Energy	EAS	57.8	mJ
Total Power Dissipation	P_D	41	W
Junction Temperature Maximum	T_{JMAX}	150	$^{\circ}\text{C}$
Storage Temperature	$T_{Storage}$	-55 to 150	$^{\circ}\text{C}$

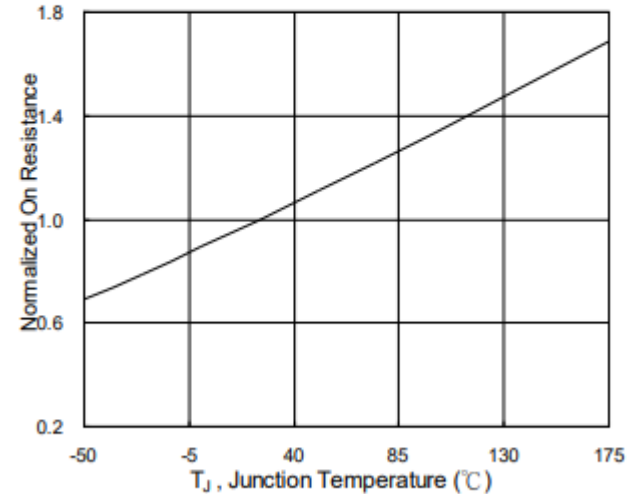
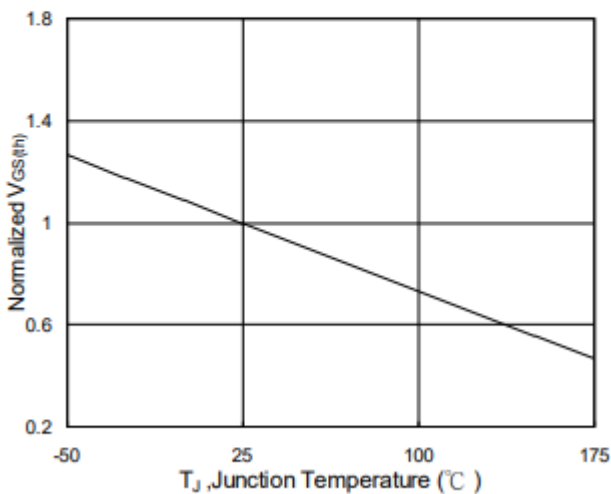
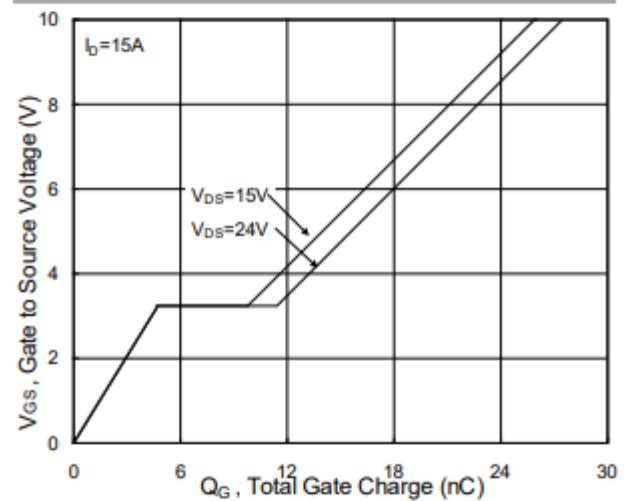
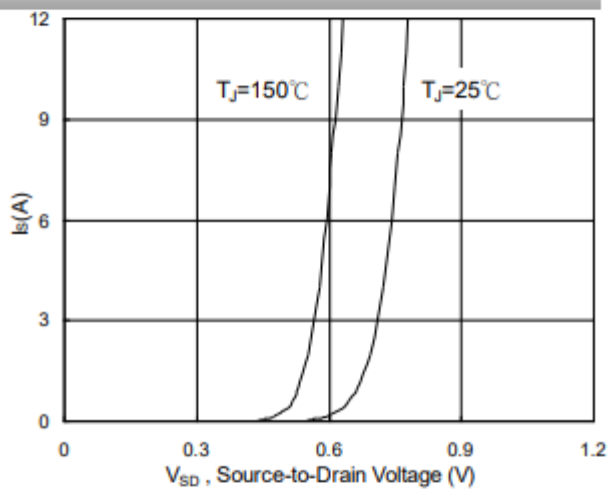
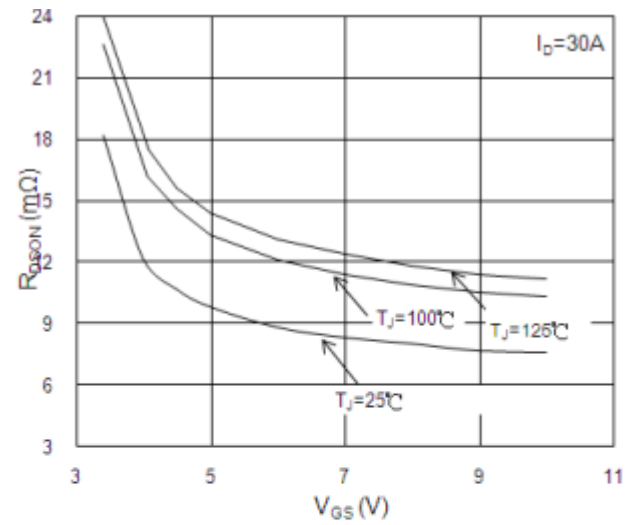
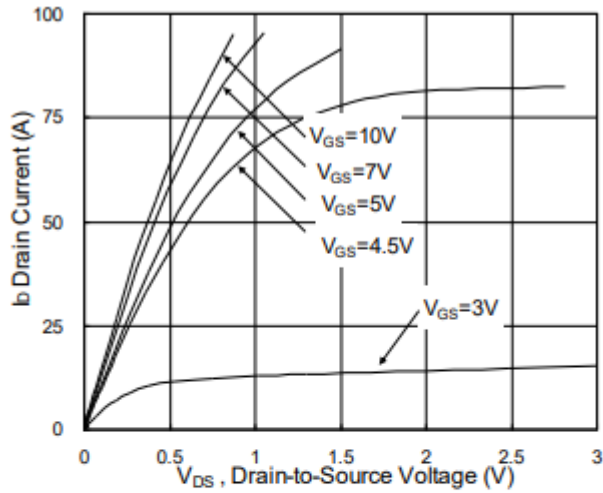
Thermal Characteristics

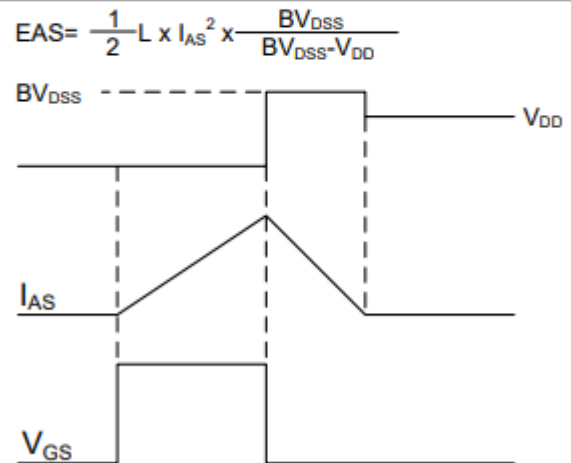
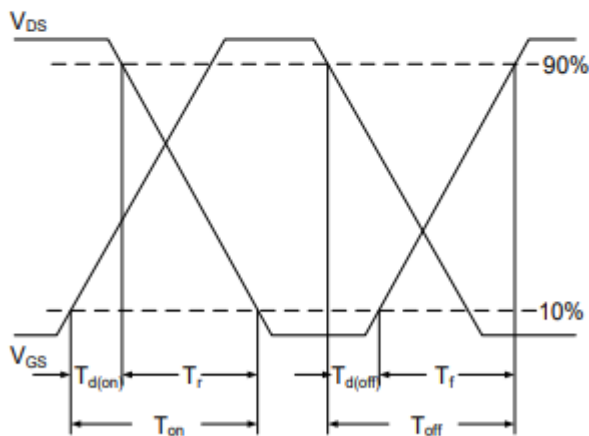
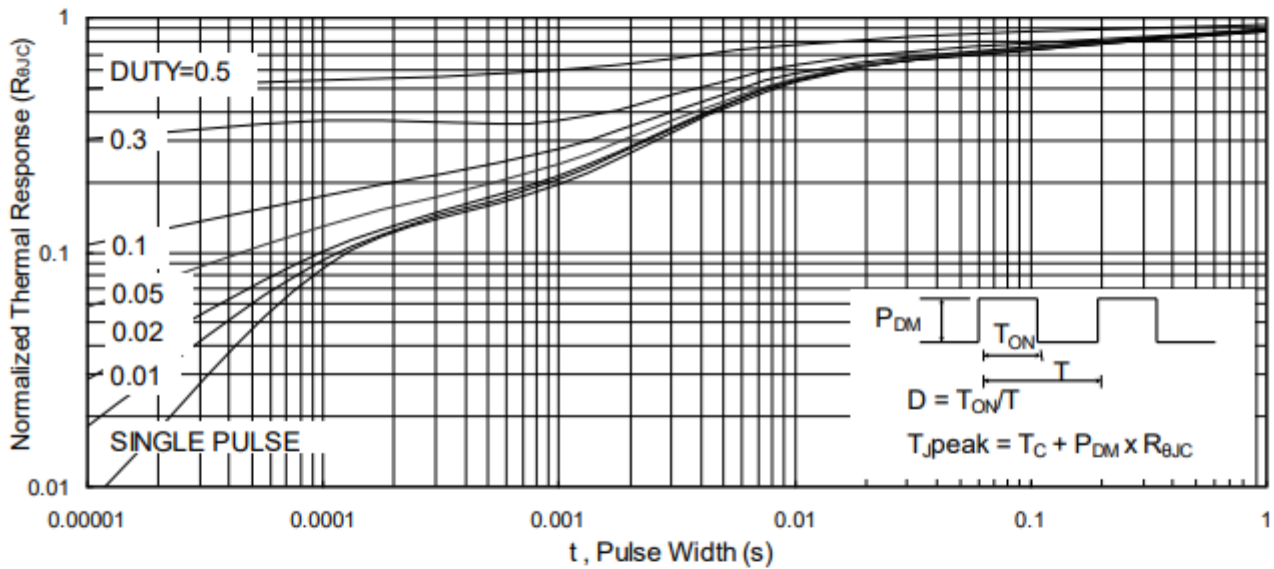
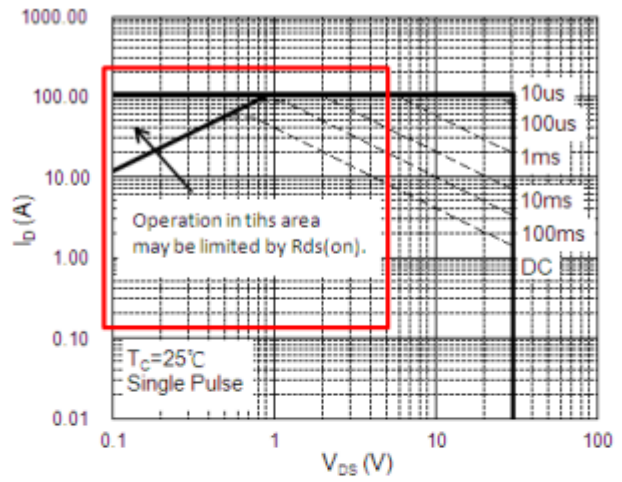
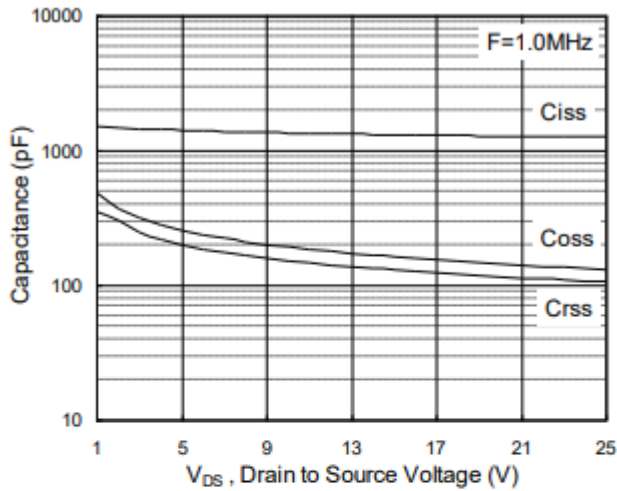
Parameter	Symbol	Value	Units
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	62	$^{\circ}\text{C}/\text{W}$

Electrical Characteristics

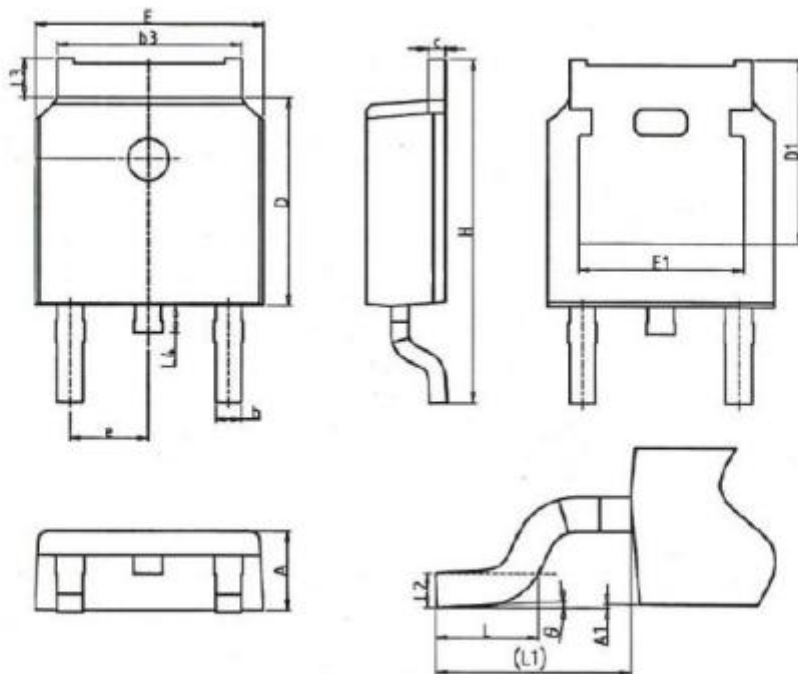
Static (T _J =25℃ unless otherwise specified)						
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D = 250uA	30	---	---	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 24V, V _{GS} = 0V	---	---	1	uA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V	---	---	±100	nA
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 30A	---	---	8.5	mΩ
		V _{GS} = 4.5V, I _D = 15A	---	---	14	mΩ
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250uA	1.2	---	2.5	V
Dynamic (T _J =25℃ unless otherwise specified)						
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 15 V, f = 1MHz	---	1317	---	pF
Output Capacitance	C _{oss}		---	163	---	
Reverse Transfer Capacitance	C _{rss}		---	131	---	
Total Gate Charge (4.5V)	Q _g	V _{DS} = 15V, I _D = 15A, V _{GS} = 4.5V	---	12.6	---	nC
Gate-Source Charge	Q _{gs}		---	4.2	---	
Gate-Drain Charge	Q _{gd}		---	5.1	---	
Turn-on delay time	T _{d(on)}	V _{DS} = 15V, I _D = 15A, V _{GS} = 10V, R _G =3.3Ω	---	4.6	---	nS
Rise time	T _r		---	12.2	---	
Turn-off delay time	T _{d(off)}		---	26.6	---	
Fall time	T _f		---	8	---	
Reverse Diode Characteristics						
Continuous Source Current	I _S	V _G = V _D = 0V, Force Current	---	---	55	A
Diode Forward Voltage	V _{SD}	I _S = 1A, V _{GS} = 0V	---	---	1.2	V
Reverse Recovery Time	t _{rr}	I _F = 30A, dI _F /dt=100A/us	---	9.2	---	ns
Reverse Recovery Charge	Q _{rr}		---	2	---	nC

Typical Characteristics





TO252-2L Package Outline



SYMBOLS	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.18	2.40	0.086	0.095
A1	-	0.2	-	0.008
b	0.68	0.9	0.026	0.036
b3	4.95	5.46	0.194	0.215
c	0.43	0.89	0.017	0.035
D	5.97	6.22	0.235	0.245
D1	5.300REF		0.209REF	
E	6.35	6.73	0.250	0.265
E1	4.32	--	0.170	-
e	2.286BSC		0.09BSC	
H	9.4	10.5	0.370	0.413
L	1.38	1.78	0.054	0.070
L1	2.90REF		0.114REF	
L2	0.51BSC		0.020BSC	
L3	0.88	1.28	0.034	0.050
L4	0.5	1	0.019	0.039
Θ	0°	8°	0°	8°