

Features

- Split Gate Trench MOSFET Technology
- Excellent Stability and Uniformity
- Moisture Sensitivity Level 1
- Halogen Free."Green"Device^(Note1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

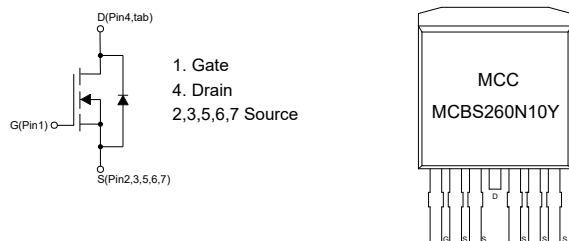
- Operating Junction Temperature Range : -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Thermal Resistance: 40°C/W Junction to Ambient(Steady-State)^(Note2)
- Thermal Resistance: 0.4°C/W Junction to Case

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	260	A
		184	
	$T_C=25^\circ\text{C}$		
	$T_C=100^\circ\text{C}$		
Pulsed Drain Current ^(Note3)	I_{DM}	1040	A
Total Power Dissipation ^(Note4)	P_D	375	W
Avalanche Energy ^(Note5)	E_{AS}	1122	mJ

Note:

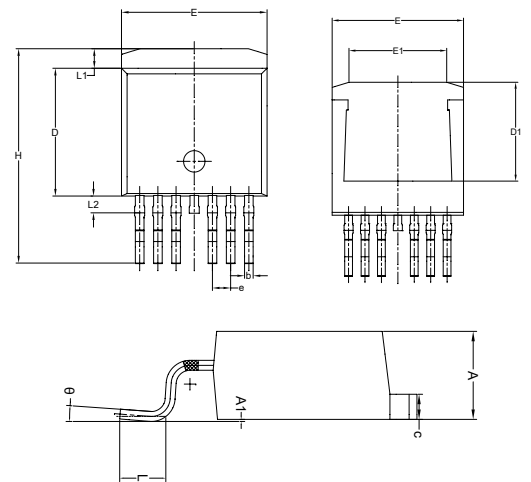
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^\circ\text{C}$. The Power dissipation P_{DSM} is based on $R_{\theta JA} \leq 10$ s and the maximum allowed junction temperature of 175°C. The value in any given application depends on the user's specific board design.
3. Repetitive rating; pulse width limited by max. junction temperature.
4. P_D is based on max. junction temperature, using junction-case thermal resistance.
5. $T_J=25^\circ\text{C}$, $V_{DD}=50\text{V}$, $V_{GS}=10\text{V}$, $L=0.5\text{mH}$

Internal Structure and Marking Code

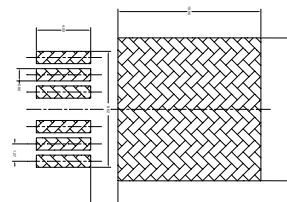


N-CHANNEL MOSFET

TO-263-7



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.167	0.183	4.24	4.64	
A1	0.000	0.010	0.00	0.25	
b	0.020	0.035	0.50	0.90	
c	0.045	0.055	1.15	1.40	
D	0.347	0.364	8.82	9.25	
D1	0.270		6.86		
E	0.392	0.408	9.96	10.36	
E1	0.256	0.310	6.50	7.89	
e	0.050		1.27		TYP.
H	0.575	0.625	14.61	15.88	
L	0.070	0.110	1.78	2.79	
L1	0.039	0.056	0.98	1.42	
L2		0.070		1.78	
theta			0°	8°	



Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =1mA	100			V
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =80V, V _{GS} =0V			1	μA
Gate-Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2	2.8	4	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =30A		1.4	1.8	mΩ
Gate Resistance	R _g	F=1 MHz, Open drain		1.4		Ω
Diode Characteristics						
Continuous Body Diode Current	I _S				260	A
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =30A			1.3	V
Reverse Recovery Time	t _{rr}	I _S =130A,di/dt=100A/μs		89.2		ns
Reverse Recovery Charge	Q _{rr}			156.8		nC
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =30V,V _{GS} =0V,f=1MHz		10589		pF
Output Capacitance	C _{oss}			5099		
Reverse Transfer Capacitance	C _{rss}			318		
Total Gate Charge	Q _g	V _{DS} =50V,V _{GS} =10V,I _D =130A		161		nC
Gate-Source Charge	Q _{gs}			38		
Gate-Drain Charge	Q _{gd}			50		
Turn-On Delay Time	t _{d(on)}	V _{DS} =50V,V _{GS} =10V, R _G =6Ω, I _{DS} =130A		41		ns
Turn-On Rise Time	t _r			174.5		
Turn-Off Delay Time	t _{d(off)}			109		
Turn-Off Fall Time	t _f			123.7		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

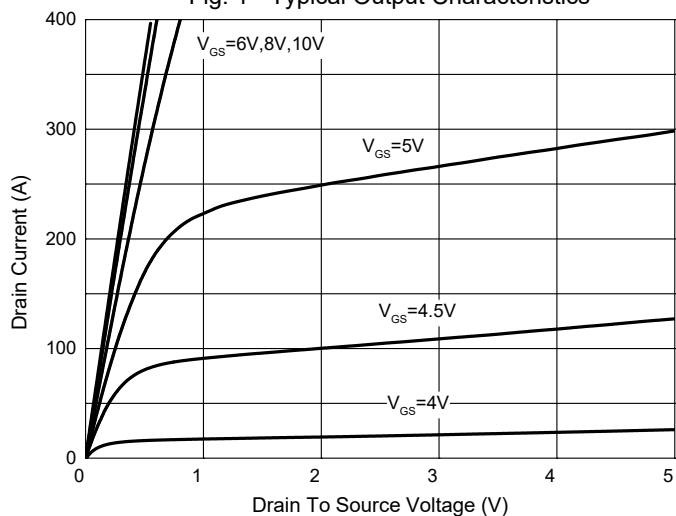


Fig. 2 - Transfer Characteristics

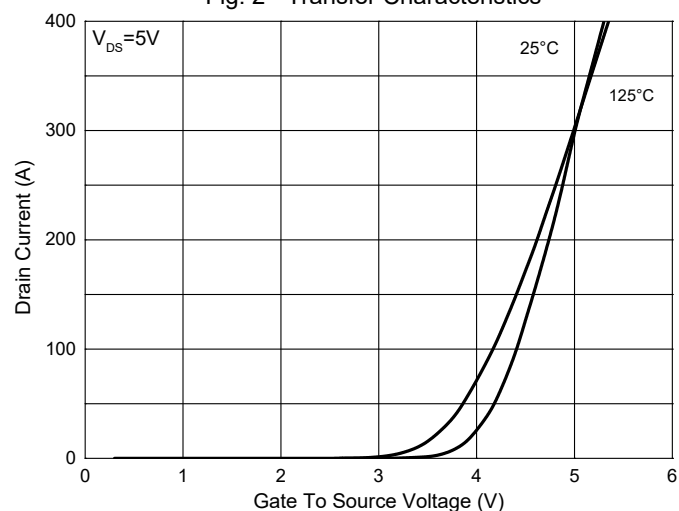


Fig. 3 - $R_{DS(ON)}-V_{GS}$

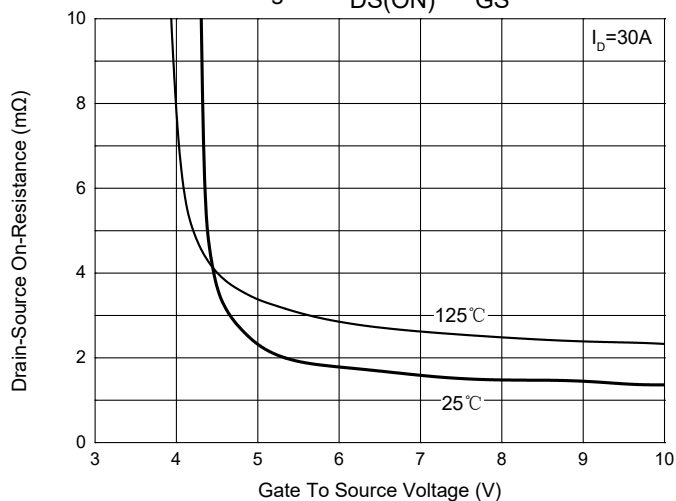


Fig. 4 - $R_{DS(ON)}-I_D$

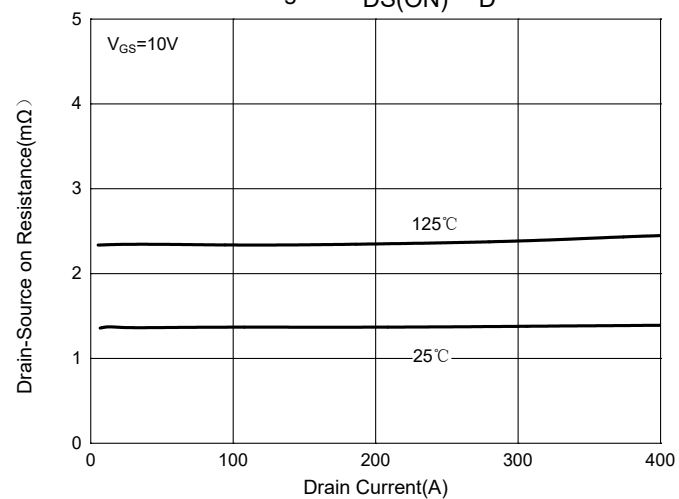


Fig. 5 - Capacitance Characteristics

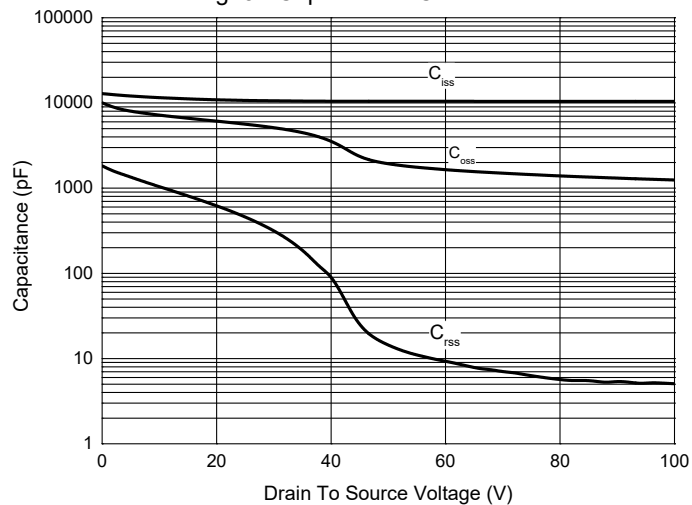
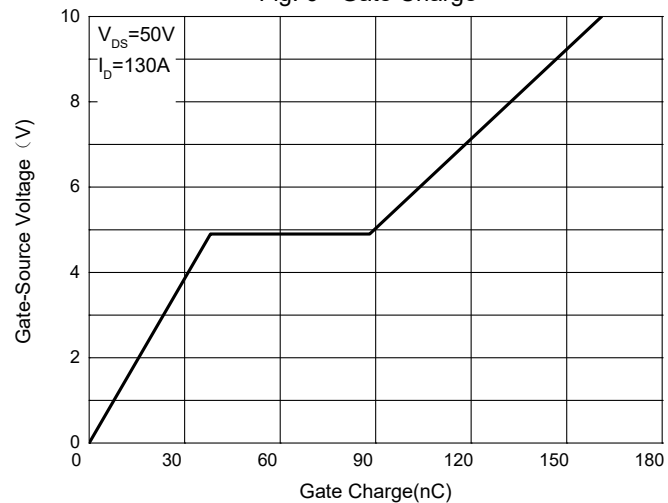


Fig. 6 - Gate Charge



Curve Characteristics

Fig. 7 - Nomalized Threshold Voltage

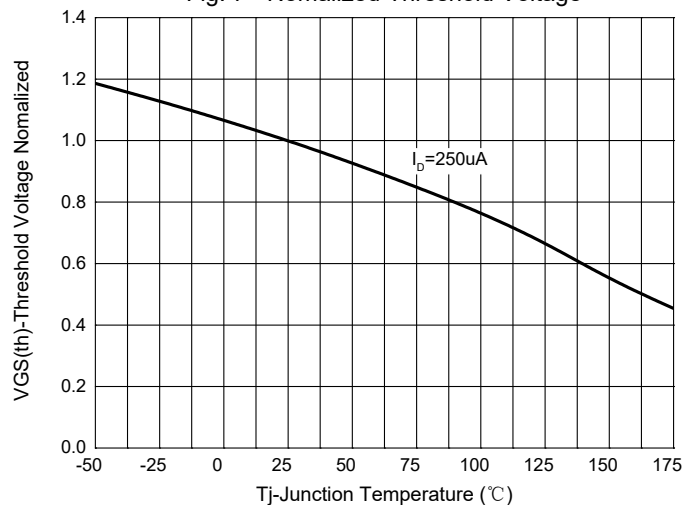


Fig.8-Normalized On Resistance Characteristics

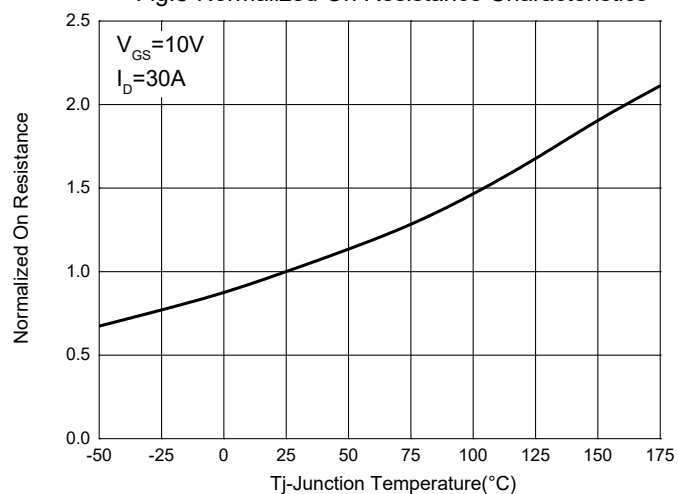


Fig.9 - $I_S - V_{SD}$

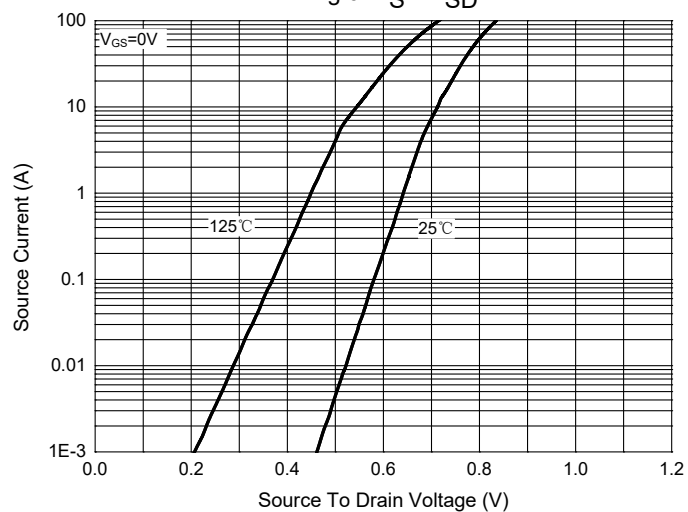


Fig. 10 - Drain Current

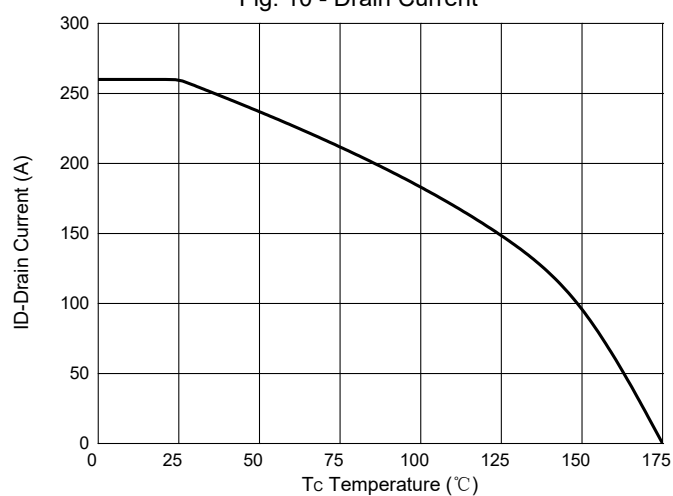
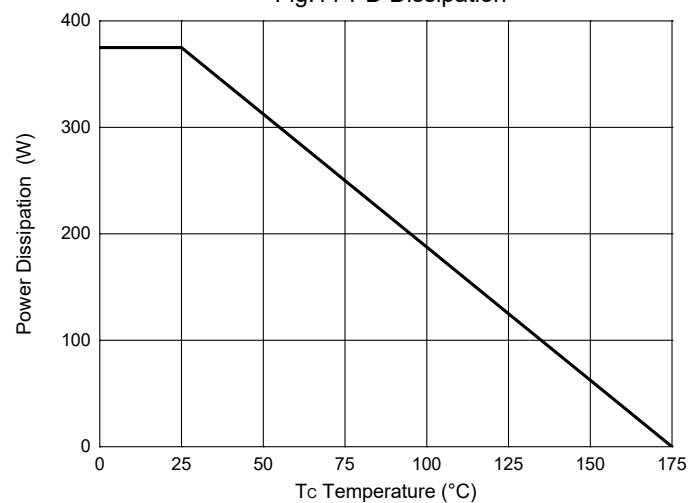


Fig.11-PD Dissipation



Curve Characteristics

Fig. 12 - Safe Operation Area

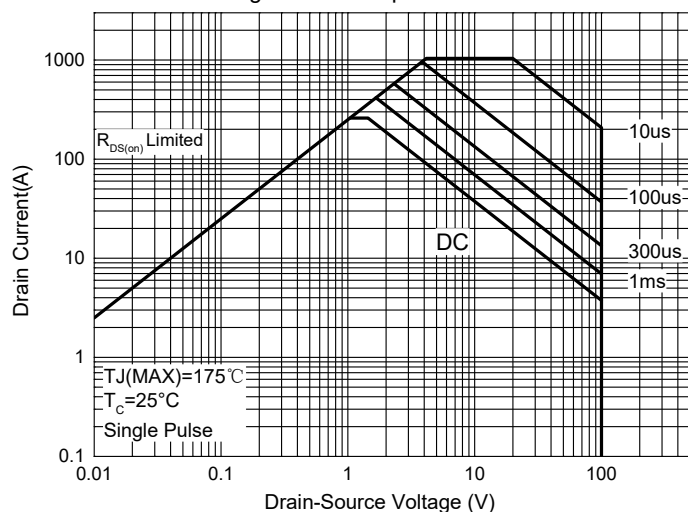
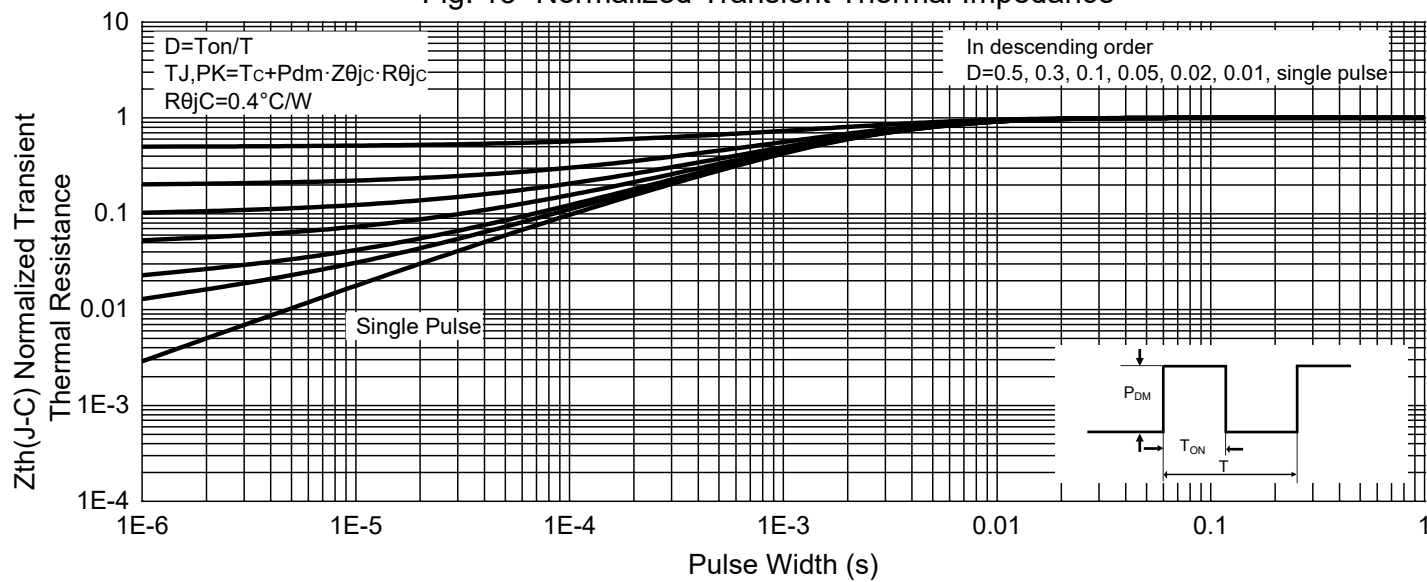


Fig. 13 - Normalized Transient Thermal Impedance



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 800pcs/Reel

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