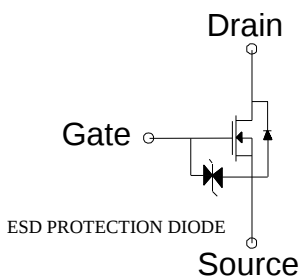


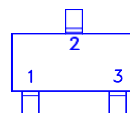
N-Channel High Density Trench MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
60V	2 Ω	400mA



SOT-323



1. GATE
2. DRAIN
3. SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C = 25^\circ\text{C}$	I_D	400	mA
	$T_C = 100^\circ\text{C}$		280	
Pulsed Drain Current ¹		I_{DM}	1	A
Power Dissipation	$T_C = 25^\circ\text{C}$	P_D	0.35	W
	$T_C = 100^\circ\text{C}$		0.14	
Operating Junction & Storage Temperature Range		T_J, T_{stg}	-40 to 150	$^\circ\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$		350	$^\circ\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μ A	60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μ A	0.6	1	1.4	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±16V			±30	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 48V, V _{GS} = 0V			1	μA
		V _{DS} = 40V, V _{GS} = 0V, T _J = 125 °C			30	
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = 10V, V _{GS} = 10V	1			A
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 3.5V, I _D = 10mA		3.5	5	Ω
		V _{GS} = 4.5V, I _D = 100mA		2.5	3.5	
		V _{GS} = 10V, I _D = 200mA		2	2.5	
Forward Transconductance ¹	g _{fs}	V _{DS} = 20V, I _D = 200mA		0.18		S

DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 25V, f = 1MHz		38		pF
Output Capacitance	C _{oss}			5		
Reverse Transfer Capacitance	C _{rss}			2		
Total Gate Charge ²	Q _g	V _{DS} = 30V _{(BR)DSS} , V _{GS} = 10V, I _D = 200mA		1.9		nC
Gate-Source Charge ²	Q _{gs}			0.4		
Gate-Drain Charge ²	Q _{gd}			1		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS(T _J = 25 °C)						
Continuous Current	I _S	I _F =200mA, V _{GS} = 0V			300	mA
Forward Voltage ¹	V _{SD}				1.2	V

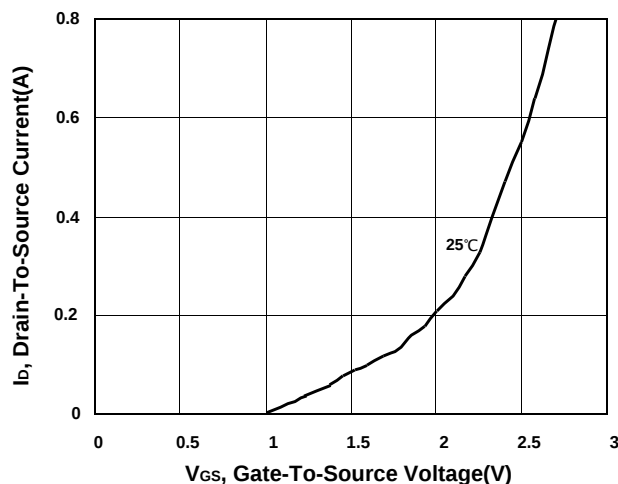
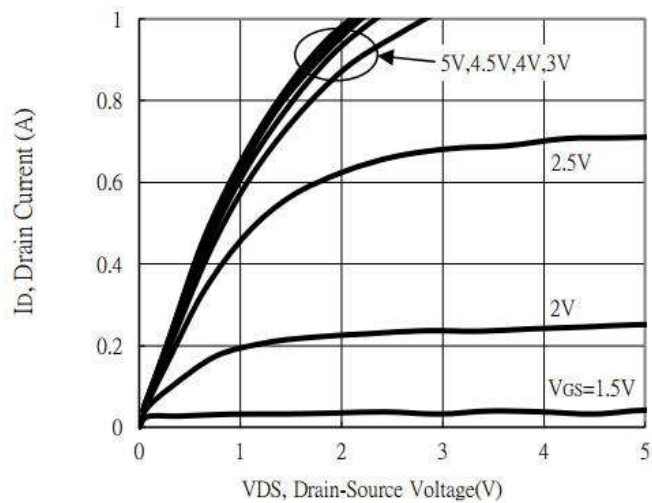
¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

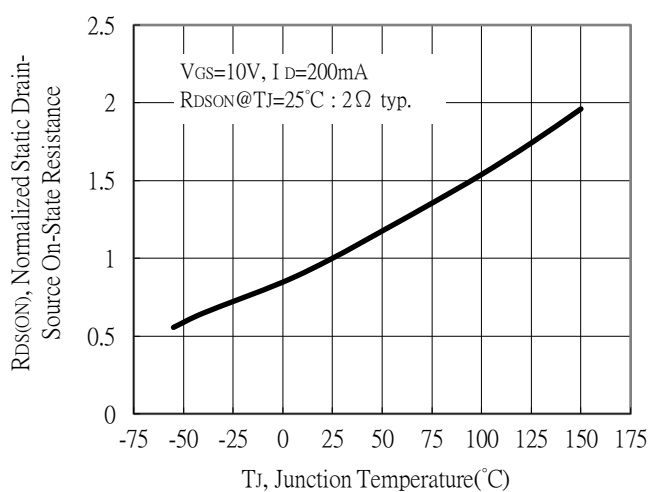
³Pulse width limited by maximum junction temperature.

REMARK: ESD Protected Gate, 2KV HBM

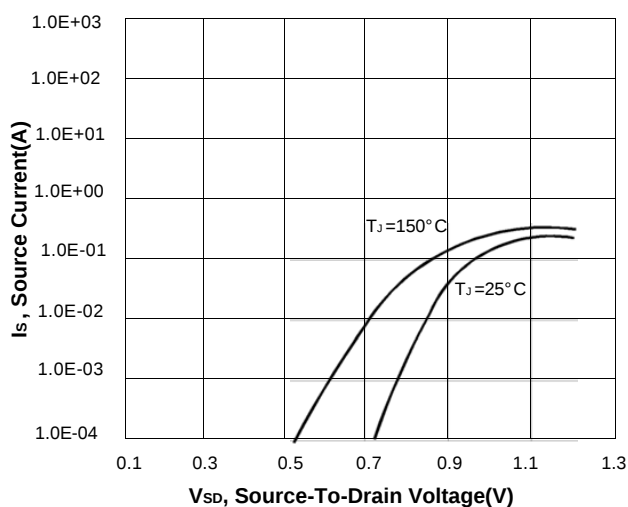
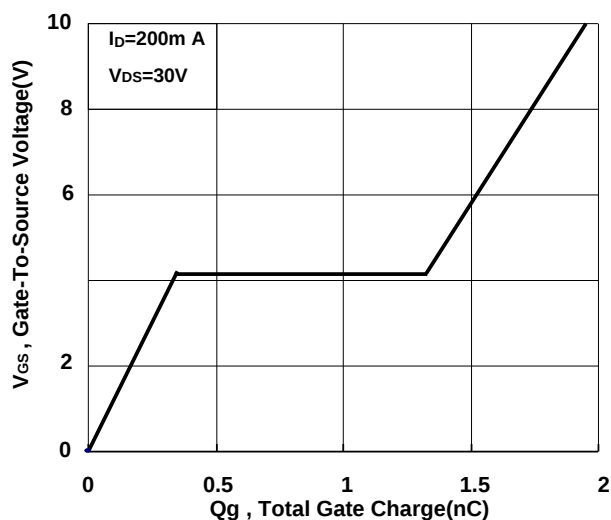
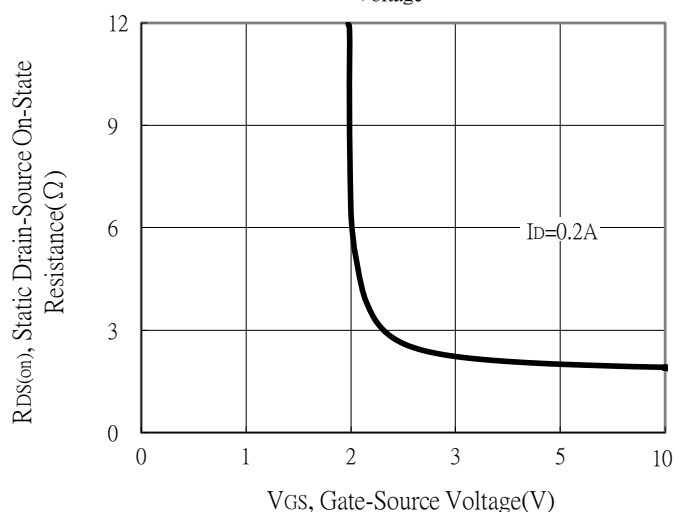
Typical Output Characteristics



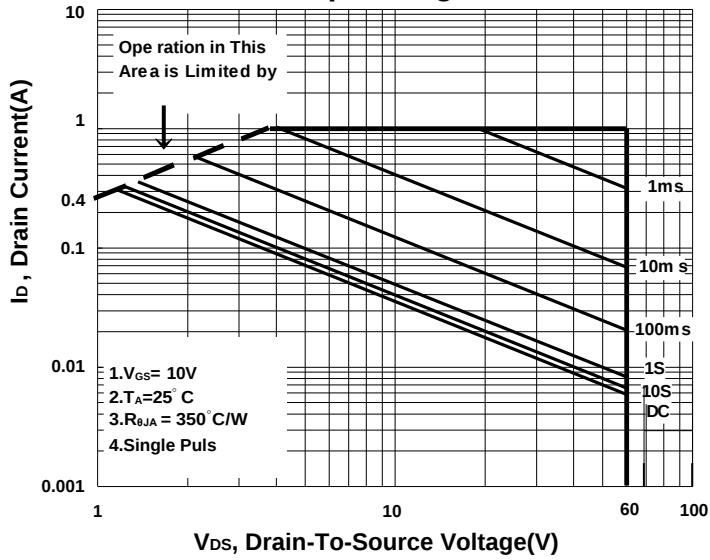
Drain-Source On-State Resistance vs Junction Temperature



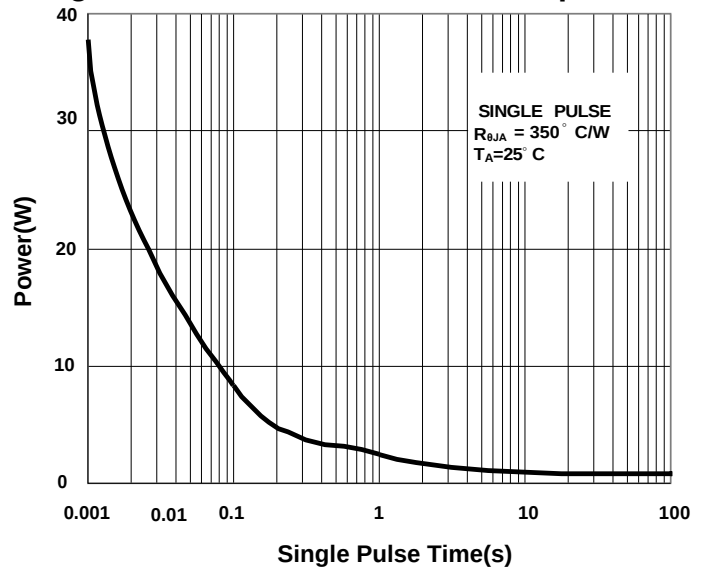
Static Drain-Source On-State Resistance vs Gate-Source Voltage



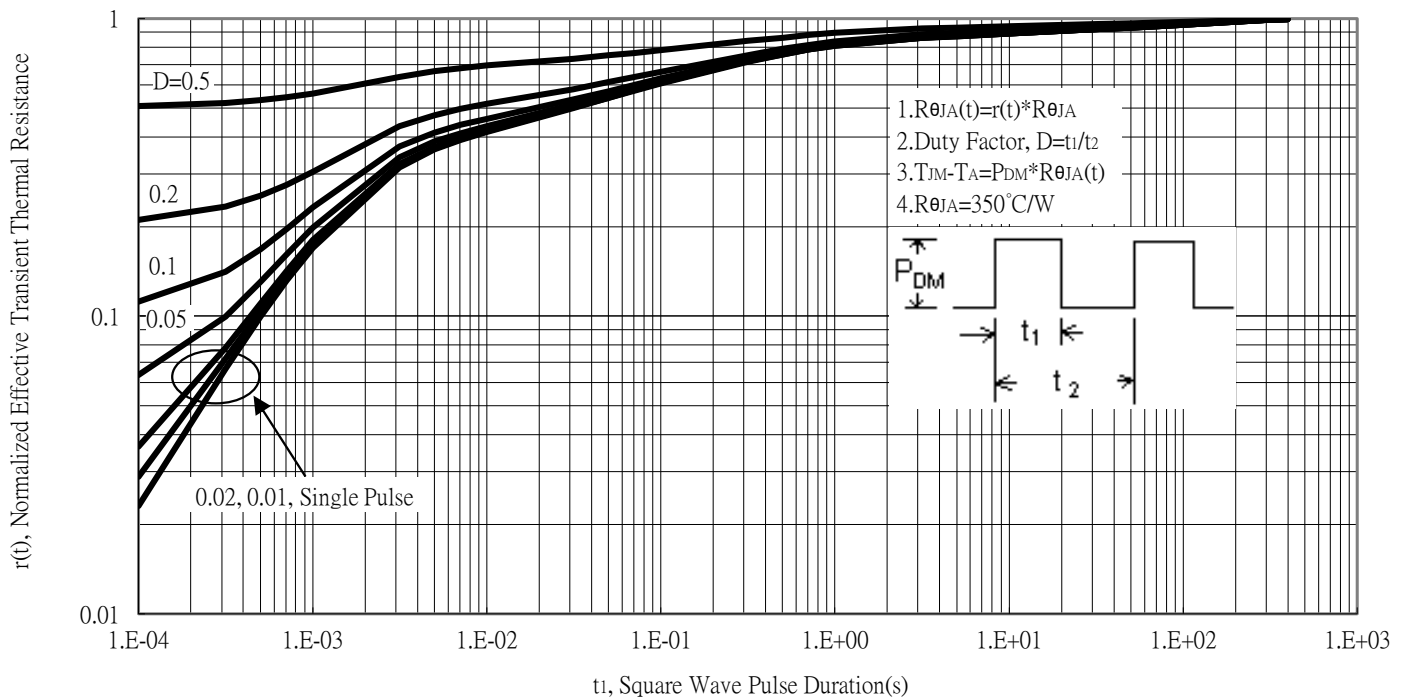
Safe Operating Area



Single Pulse Maximum Power Dissipation

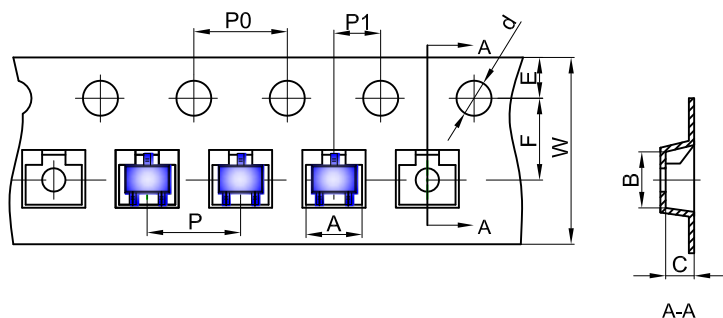


Transient Thermal Response Curves



SOT-323 Tape and Reel

SOT-323 Embossed Carrier Tape

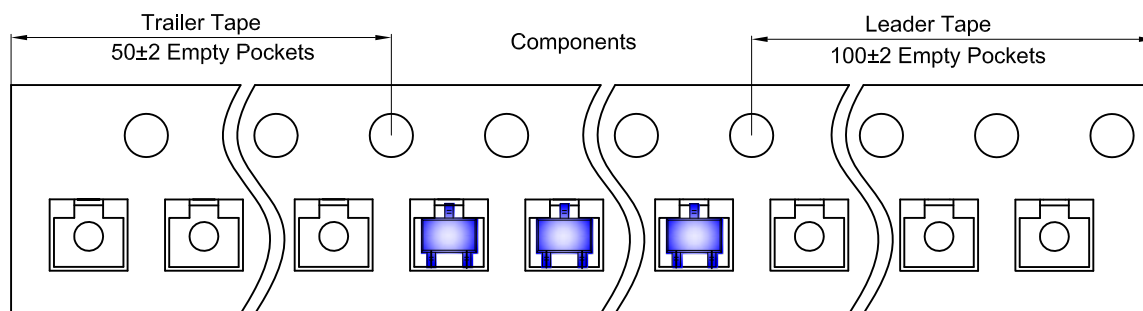


Packaging Description:

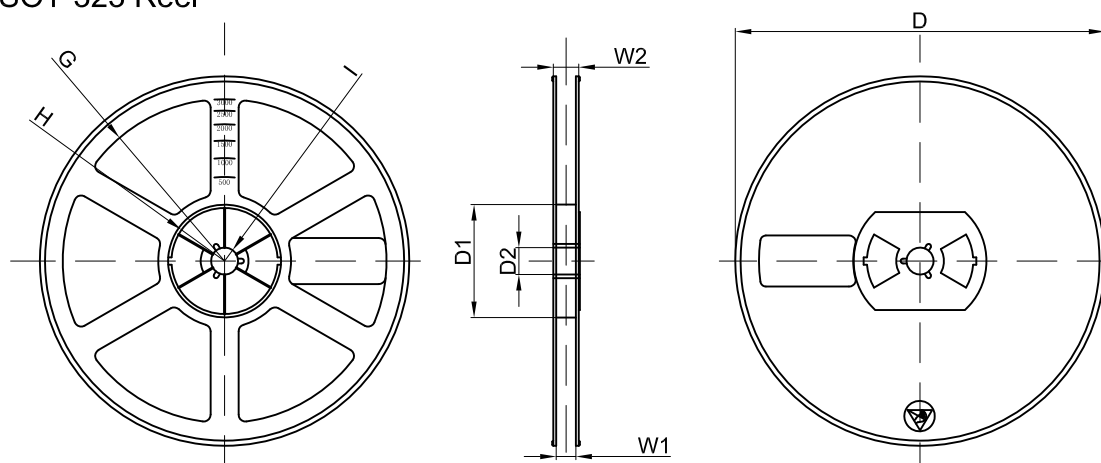
SOT-323 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-323	2.25	2.55	1.19	Ø1.55	1.75	3.50	4.00	4.00	2.00	8.00

SOT-323 Tape Leader and Trailer



SOT-323 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	